ETERNAL DANCE OF MACROCOSM

Michael Bhaktaviirya Towsey

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CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

PART 1—MATTER : THE PHYSICAL SCIENCES

1. THE FIVE FUNDAMENTAL FACTORS ... 1
Brahmacakra 2
A Particle Approach to Modern Physics 4
Reconciliation 6
New Problems 7
Matter as Wave and Particle 8
Liquid Factor 9
Solid Factor 12
Etherial Factor 12
Aerial Factor 14
Luminous Factor 15
The Nested Universe 16

2. THE STRUGGLES OF MATTER 19
The Four Forces of Nature 19
Tanmatras and Fundamental Particles 23
Prana 26
Jadasphota 28
The Big Bang 30
Entopy 32
Potential Energy and Desire 35
Frustration and the Speed of Light 39
The Conservation Laws 40
A Thought About the Future 41

3. MIND OVER MATTER 43
Matter and the Eye of the Beholder 43
Tanmatras and Perception 48
Has Physics Discovered the Cosmic Mind' 53
The Meaning of Quantum Physics 58
The Anatomy of the Cosmic Mind 63

PART 2—MICROCOSM :
THE PSYCHOLOGICAL SCIENCES

4. THE ORIGIN OF LIFE	...	...	70
Setting the Stage for Life	...	...	71
Life According to Brahmacakra	...	...	72
Life in the Biological Sciences	...	...	73
Two Theories of the Evolution of Life	...	...	74
The Role of Chance	...	...	76
Chromosomes and Samskaras	...	...	79
Life Requires a Space	...	...	81
Mind is the Product of Physical Clash and Chemical Reaction	...	...	84
5. THE EVOLUTION OF UNIT MIND	...	...	88
Synthesis and Centripetal Evolution	...	...	88
Parallelism Between Mind and Body	...	...	90
The Development of Unit Mind	...	...	94
Dharma	...	...	97
Anatomy of the Human Mind	...	...	100
Mind as Hologram	...	...	104
6. HUMAN PSYCHOLOGY	...	...	107
Developmental Psychology	...	...	107
The Subjective Mind	...	...	113
The Pre-Trans-Fallacy	...	...	120

PART 3—SOCIAL PSYCHOLOGY :
THE SOCIAL SCIENCES

7. MATTER, MIND AND IDEOLOGY	...	...	130
The Individual and the Collective	...	...	130
Ideology	...	...	132
Private Property Versus Collective Propert	...	...	138
The Five Fundamental Principles of Prout	...	...	142
The Meaning of Progress	...	...	149
Neo-Humanism	...	...	151

8. THE DIALECTICAL MECHANISM IN SOCIETY 161
The Dialectical Mechanism 162
The Gender Dialectic 164
The Past 166
The Present 171
The Future 172
The Gender Dialectic in Perspective 174

9. THE COLLECTIVE MIND AND ITS PEYCHOLOGY 177
The Collective Psychology 178
Analysing the Collective Psychology 179
Six Spokes of the Collective Phychology 181
Social Dynanism and the Collective Psychology ... 182
Dominance in the Collective Psychology 184
Manipulating the Collective Psychology 187
The Role of Sadvipras 190
Opposing Capitalism 194

10. SOCIAL THEORIES—GOING BEYOND OPINION 196
The Failings of Theory 196
Five Levels of Experience 199
Sources of Stimulation 201
The Sciences 205
The Positivist Sciences 207
Dialectical Materialism 210
The Transcendental Sciences 216

PART 4—CONSCIOUSNESS : THE SPIRITUAL SCIENCES

11. HUMAN CONSCIOUSNESS 220
Altered States of Consiousness 220
Political Consciousness 224
Consciousness in Marxism and Brahmacakra... ... 230
A Practical Approach for the Realisation of Consciousness 232
Three Stages of Neo-Humanism 236

12. COSMIC CONSCIOUSNESS 238
Perennial Philosophy 239
Monism Versus Dualism 240
The First Cause 243
The Cosmic Nucleus 244
The All Knowing 245
The Final Effect 246
Cosmic Consciousness and Supra-Asethetic Science ... 248

ERRATA AND NOTES 253

LIST OF ILLUSTRATIONS

Figure 1 —The Nested Universe
Figure 2 —Distortions of Space Time
Figure 3 —Prakrti Compressing the Five Fundamental Factors.
Figure 4 —The Higgs Field
Figure 5 —Sequence of Particle Creation
Figure 6 —Bhutas, Tanmatras and their Relationship with Physical Properties.
Figure 7 —The Interplay of Interial and Exterial Forces
Figure 8 —Explosions in the Process of Saincara
Figure 9 —The Effect of Entropy
Figure 10 —Energy Transformation to Move Water
Figure 11 —Energy Transformation on a Cosmic Scale
Figure 12 —Three Models of the Universe
Figure 13 —Table of Tanmatras and Sensory Organs
Figure 14 —The Cyclical Process of Human Perception
Figure 15 —Representation of the Universe Existing Within the Cosmic Mind and Cosmic Consciousness
Figure 16 —The Ordering of Consciousness
Figure 17 —The Relationship Between Unbound Consciousness, the Cosmic Mind and the Universe
Figure 18 —The Relationship Between the Cosmic Mind, the Human Mind, the 5FF, Tanmatra Particles and Theories of Particle Physics
Figure 19 —Table of the Lokas, their Names and Characteristics
Figure 20 —The Cycle of Creation
Figure 21 —The Organic Broth Theory
Figure 22 —The Clay Feet Theory
Figure 23 —Time Chart for the Evolution of Our Universe
Figure 24 —The Magnitude of Basic Structures in Creation
Figure 25 —The Magnitude of Basic Structures in Creation Including Human Beings and Cells
Figure 26 —The Creation of a Magnetic Field From a Wire Coil

Figure 27 —Comparison Between a Magnetic Field and a Living Cell
Figure 28 —Charge Separation in a Bacterial Cell
Figure 29 —The Synthetic Flow of Evolution
Figure 30 —Levels of Organic Evolution and their Physical, Psychic and Spiritual Characteristics
Figure 31 —The Five Levels of the Human Mind and their Correspondence with the Layers of the Cosmic Mind
Figure 32 —Mind Activity and Different States of Consciousness
Figure 33 —Structural Unfolding of the Human Mind
Figure 34 —The Development of the Self in Western Psychology
Figure 35 —The Evolution of Human Mind
Figure 36 —The Structure of Each Level of the Unit Mind
Figure 37 —Two Forms of the Pre-trans-fallacy
Figure 38 —Additive Model for the Components of the Collective Mind
Figure 39 —Some of the Components of Human History
Figure 40 —The Levels of Mind and their Experiences
Figure 41 —Sources of Experience for the Human Mind
Figure 42 —The Lokas and Different Areas of Study and Behaviour
Figure 43 —Positivist Methodology
Figure 44 —Praxis—the Combination of Theory and Practice

INTRODUCTION

This book began as a modest attempt to reconcile the physical parts of P. R. Sarkar's philosophy of Brahmacakra with 20th century physics. However at the urging of a close friend, Jayanta Kumar, it became a much bigger and potentially enormous enterprise; the reconciliation of the entire Brahmacakra philosophy with the relevant knowledge acquired by Western science. Since Brahmacakra is not just a philosophy but an all encompassing Cosmology that embraces everything from the largest galactic event to the smallest human feeling or motivation, the author (not to mention the reader) has been lucky to escape with so short a book !

This book also has a secondary purpose; to introduce the reader to the broad outline of Brahmacakra philosophy. Since this has been a secondary consideration, the reader will certainly find it helpful to supplement their reading with other commentaries on Brahmacakra and with books by P. R. Sarkar himself.

Comparing an Eastern philosophy such as Brahmacakra with Western philosophy is rather like comparing the proverbial chalk and cheese. The two have quite different methodologies and language. These differences are hardly superficial—they reflect two fundamentally different orientations of the human mind. The thought of comparing them, let alone attempting a synthesis, would probably not even arise but for one arresting factor; they both purport to describe the universe in which we live ! How two human cultures can look at the same universe (even the same planet) and see quite different things is one of the paradoxes we shall be unravelling in the course of these chapters.

Because a book such as this had the potential to become unwieldy, the author had to be fairly ruthless in what was included and what excluded. Those who are knowledgeable in Eastern philosophy or one or other of the Western sciences may

feel that their speciality has been inadequately dealt with. But I have preferred to paint the broader canvass and leave the details to be filled in over the coming years. The author fully accepts responsibility for whatever faults, errors and inadequacies that can be found herein. But it is in the nature of the scientific approach that errors and inadequacies provide the impetus to greater understanding. Every scientist knows that human knowledge is forever changing; that what is true today is questionable tomorrow. Even if certain Transcendent Truths do not change our limited appreciation of them certainly does. So this book should not be read as a definitive treatise but as a progress report. It is part of the never-ending quest for a better understanding of our universe and ourselves. The author looks forward to future books that will build on what is contained here, just as I have built extensively on the work of others. In this way scientific endeavour adds to the charms of human existence.

By the very nature of the subject this book is not easy reading and the reader cannot expect to approach it casually. Perhaps the best system is to read the book through in its entirety to get the overall picture without worrying about the detail. Later those parts which interest the reader can be re-read.

The title for this book—"Eternal Dance of Macrocosm"—was most graciously given by P. R. Sarkar. Macrocosm means the Cosmic Mind and "Eternal Dance of Macrocosm" refers to the never ending play of creation.

The first three chapters deal with the extroversial phase of Brahmacakra (Saincara) and make a reconciliation with the physical sciences. Chapters 4 to 6 are concerned with the introversial phase of Brahmacakra (Prati-saincara) and make a reconciliation with the biological and psychological sciences. Chapters 7, 8 and 9 introduce P. R. Sarkar's social and political philosophy and compare them with the Western equivalents. Chapter 10 is concerned with epistemology; the way in which we acquire knowledge and accept it as truth. It compares and contrasts three epistemological models: logical positivism, dialectical materialism and a hierarchical paradigm which encompasses a range of scientific methods including the Transcendent. Finally Chapters 11 and 12 discuss the notion

of consciousness in relation to human consciousness and Cosmic Consciousness respectively.

The author apologises for the lengthy errata. The book was written in Sydney and published in Calcutta and the process of sending proofs and corrections by mail inevitably resulted in some confusion. The reader is urged to check the errata before starting each chapter.

Sanskrit words, which are the language of Eastern Cosmology, have been kept to a minimum. Wherever possible the author has used English translations except where none seemed appropriate.

Finally thanks to Ac. Cidghananda Avt. and Ac. Shambushivananda Avt. for their valuable suggestions; to Ac. Jagadiishvarananda Avt. for reviewing and correcting several sections; and to Jayanta Kumar for publishing the book. Discussion on any of the subjects raised is most welcome.

THE FIVE FUNDAMENTAL FACTORS

Ya eko ja'lava'n iishata iishaniibhih Sarva'nloka'n iishata iishaniibhih	Behind all the manifestations in the universe, there is One, a Cosmic Magician, who controls all.
Ya evaeka udbhave sambhave ca	Whatever has been or will be created is that One alone.
Ya etad vidur amrta'ste bhavanti (from the Rg Veda)	Those who realise this One Entity become immortal.

$E = mc^2$ (Albert Einstein)	Matter is nothing but 'congealed' or highly condensed energy.

Cosmology, the study of our universe, what it is made of and where it comes from, has fascinated human beings since earliest times. It has developed differently in various parts of the world due to strong cultural influences. In general terms we may distinguish two schools of cosmology; Eastern cosmology, whose language is meta-physical and whose methodology is that of the Intuitional Sciences; and Western cosmology, whose language is mathematical and whose methodology is that of the physical sciences. Compare for example the two statements above which are typical of their respective schools.

Eastern and Western cosmologies both claim to describe the same thing, the universe in which we all live. We would therefore expect to find a degree of correspondence between them despite differences in language and methodology. Such a correspondence would have been impossible to establish prior to the 20th century because Western cosmology had not reached the required level of meta-physical subtlety. This changed however with the development of Einstein's General Theory of Relativity and Quantum Mechanics, the two pillars of modern physics. Western physicists were quick to perceive a 'harmony' between

their new physics and Eastern cosmology. As the new physics became more accessible to the public, a number of books appeared comparing the two schools of cosmology, the best known being "The Tao of Physics" and "The Dancing Wu-Li Masters".

The cosmology of Ananda Marga philosophy is known as "Brahmacakra", or the Cycle of Creation. It is described in a number of books by the founder of Ananda Marga, P. R. Sarkar including "Ananda Sutram" and "Idea and Ideology". Brahmacakra is in the tradition of Eastern cosmologies, which of course raises the question of its relationship to 20th century physics. Unfortunately a reading of "The Tao of Physics" and "The Dancing Wu-Li Masters" does not immediately offer any help. The first part of this book is an attempt to bridge the gap between Brahmacakra and Western cosmology. It turns out that Brahmacakra, because of its different approach, can offer solutions to problems that are currently baffling physicists. An article called "Stimulating Thoughts on Brahmacakra" by an anonymous Margi in the USA, the first half of which was published in a 1983 edition of an Ananda Marga magazine in Australia, links the Five Fundamental Factors in creation to a range of sub-atomic particles, and provided this author with the essential clues to bridging the gap between Brahmacakra and modern physics. This chapter appropriately begins with a summary of the main points in "Stimulating Thoughts on Brahmacakra".

Errors and inadequacies will undoubtedly be discovered in these chapters because the author is neither an expert in modern physics nor Brahmacakra. But it is in the nature of the scientific approach that errors and inadequacies provide the impetus to greater understanding. The author is sure that the ongoing effort to understand Brahmacakra by scientists in all parts of the world will only add to its charm.

Brahmacakra

In the philosophy of Brahmacakra, the fundamental stuff of existence is said to be Consciousness or the Cognitive Principle. All the myriads of real and imagined things in existence

are just different manifestations or modifications of Consciousness. The force which modifies Consciousness is known as Prakrti or the Operative Principle. Consciousness and Prakrti are the dual and inseparable aspects of the One Entity, Brahma. In the passage from the Rg Veda quoted above, Brahma is thought of as a Cosmic Magician because of Its limitless creative capacity.

In the initial stage of creation, Consciousness is modified or crudified by Prakrti to become the physical universe, which consists of five wave forms called the Five Fundamental Factors (hereafter 5FF). The 5FF are etherial, aerial, luminous, liquid and solid factors. Eventually, under the influence of Prakrti, physical matter takes on sufficient complexity to give rise to living organisms. Living things are possessed of physical bodies working in conjunction with unit mind. In the process of organic evolution, living organisms and their minds become more and more complex. Unit mind eventually becomes subtle enough to merge with the Cosmic Mind and finally back into Consciousness. Thus in Brahmacakra philosophy there is a cycle: Consciousness → Cosmic Mind → Matter → Living Organisms → Unit Mind → Cosmic Mind → Consciousness, hence Brahmacakra or the Cycle of Creation. Note that Brahmacakra agrees with materialist philosophies that mind emerges out of matter, but goes back further to say that matter arose out of Cosmic Mind.

Because Western cosmologies deal almost exclusively with the material world, the aspect of Brahmacakra concerning the 5FF requires further elaboration. The 5FF, or Bhutas in Sanskrit, are defined by a number of laws which include the following. Firstly, the factors or Bhutas are just patterns of waves: "...an object...is nothing but a wave motion within the body of the Cosmos", ("Idea and Ideology" p. 23). Ether has the longest wave length and is most subtle, while the solid factor has the shortest wavelength and is most crude. The crude factor arises out of the subtler factor by the compression of Prakrti. Secondly, subtler waves can pass through cruder waves but not vice versa. Ether penetrates all factors but liquid can only penetrate solid factor and so on. Thirdly, the 5FF carry sensory attributes called Tanmatras. The factors themselves are not known to us. Only the Tanmatras are known to us. Fourthly, Tan-

matras appear to be both particle and wave phenomena. Tanmatra means minutest particle of a Bhuta, yet they are also waves. Fifthly, Tanmatras are formed as "a result of reflection of the subtler Bhuta on the cruder ones, ("Idea and Ideology" p. 24). We identify a Bhuta by the crudest Tanmatra it carries; that is, ether carries only sound Tanmatra, solid carries all five Tanmatras. Finally, when the pressure on solid factor becomes excessive, it will spontaneously dissociate into the subtler factors, which is known as Jadasphota.

If we read the account of Brahmacakra in "Idea and Ideology" interpreting the words associated with the 5FF according to everyday usage, especially the words liquid, solid and aerial, several contradictions arise. Firstly, gases such as chlorine and sulphur have both colour and smell Tanmatras yet aerial factor is supposed to have only sound and touch Tanmatras. Secondly, etherial factor is said to convey sound, but sound as we know it requires gas as a carrying medium. Thirdly, ice melts into water and water into vapour quite spontaneously—this is hardly Jadasphota. There is no change in mass, no production of luminous factor. Compare for instance an atomic explosion where solid matter is converted into massive amounts of radiation energy. Fourthly, liquid water cannot penetrate a solid metal bar—in fact the reverse occurs.

"Stimulating Thoughts on Brahmacakra" avoids these contradictions by proposing that atoms are composite structures composed of all the 5FF. Gases, liquids and solids, in the ordinary sense, represent different densities of atoms. They are states of matter rather than the Bhutas themselves. But before explaining further, we need to understand a little of the structure of matter.

A Particle Approach to Modern Physics

Matter consists of atoms. Atoms consist of a nucleus, containing neutrons and positively charged protons, surrounded by layers of negatively charged electrons. Modern physics has discovered a large family of sub-atomic particles related to protons and neutrons, and a smaller family of particles related to

the electron. In addition to these families of particles there is the electro-magnetic (e-m) spectrum of radiation. Radiation has both a wave and a particle or quantum character. Quantum of radiation is the photon.

The photon and the electron are fundamental particles, that is, they act as points with no apparent internal structure. Protons, neutrons and other heavy particles are not fundamental. Recent discoveries have shown them to be composed of quarks. There are six 'flavours' of quarks and combinations of them in two's and three's account for all the known heavy particles. Quarks have never been observed and it appears unlikely that they can be observed since they are trapped within their parent particles. Whether they are the final fundamental particle is impossible to know at this stage.

There are currently four forces that explain all the observed interaction of matter; gravitational force, electro-magnetic force, weak nuclear force and strong nuclear force. The first two are well known in the every day world. The weak nuclear force is responsible for radioactive decay of unstable nuclei. The strong nuclear force binds quarks together into protons and neutrons, and further acts to bind protons and neutrons into atomic nuclei.

How is it possible for two apparently inert bodies such as the earth and the moon to 'feel' one another's presence even though separated by enormous distances ? According to Quantum Field Theory, physical bodies feel one another at a distance because they exchange minute particles. For example, the earth, moon and sun remain bound to one another by exchanging gravitons which are the quantum particle of gravitational fields. Likewise charged particles interact by exchanging photons, the quantum of electro-magnetic fields. The weak and strong nuclear forces also have their respective exchange particles. Thus in modern physics we must distinguish between matter particles such as the electron, the quark and the neutrino (a mysterious particle that will be introduced later) ; and force particles such as the graviton and the photon.

Mention must be made of the vacuum state in modern physics. In classical physics the pure vacuum is pure nothingness, but in quantum physics it is an energy field defined by complex mathematical equations. Furthermore it spontaneously gives

rise to particles which appear as if created out of nothing. Such particles are known as virtual particles because they exist only for a short time before the energy violation is detected and they disappear. Virtual particles have no certain existence—they are allowed only fleeting existence due to Heisenberg's Uncertainty Principle. Yet it is thought that the vacuum state is a seething ocean of virtual particles which swarm around matter particles. The force particles described above are all virtual particles.

Reconciliation

The article "Stimulating Thoughts on Brahmacakra" related the 5FF to the various families of sub-atomic particles as follows :

* Solid factor is the family of six quarks.
* Liquid factor is the family of the electron and other similar particles.
* Luminous factor is the photon.
* Aerial factor includes the force particles, although the article admits difficulty with this match up.
* Etherial factor is the vacuum field of energy.

Because atoms contain all the 5FF according to this interpretation, then the contradictions mentioned before can be solved.

Firstly, an isolated chlorine molecule in a vacuum does not represent aerial factor but rather all the 5FF. Thus the chlorine molecule can express Tanmatras of colour and smell.

Secondly, to say that etherial factor carries sound Tanmatra means in the language of Brahmacakra that it has a vibrational quality. We observe that the vacuum state of modern physics is also a vibrational field. Einstein's Theory of Relativity demolished the old idea of an ether permeating space. However the concept of something permeating space-time is having to be resurrected in order to explain the creation of virtual particles. Says respected physicist and cosmologist, Alan Guth, "Space-time is definitely a kind of stuff".

Thirdly, the transition from ice to water to vapour is a

change of state of physical structure. It is not Jadasphota. Jadasphota occurs in dead or dying celestial bodies where nuclear reaction converts matter into radiation, energy etc.

Fourthly, it is now apparent that a subtle factor can penetrate a cruder factor but not vice versa. Space penetrates all factors. Virtual particles and photons penetrate electrons and protons but not vice versa. Electrons can merge with protons to become neutrons. Electrons flow through a metal wire as electric current.

Fifthly, evidence that photons carry touch Tanmatra lies in the behaviour of a comet. Observers of Halley's comet will note that its tail always points away from the sun 'blown' by the sun's radiation or the solar wind.

Why does P. R. Sarkar use the words aerial, liquid and solid to describe the fundamental factors in apparent confusion with the states of atomic matter? There is an ancient Taoist aphorism which says: "As above, so below". For example, as we descend the musical scale we sense that the octave notes, with double the wavelength, have certain tonal properties in common. Similarly, the atom, the solar system and the galaxy have many structural and behavioural features in common although at totally different orders of magnitude. Matter demonstrates the octivity principle. A gas cloud reflects certain of the properties of aerial factor and liquid water reflects certain of the properties of liquid factor. For example, most common gases such as oxygen, nitrogen and hydrogen are colourless, odourless and tasteless. The only senses they stimulate are sound and touch (wind). Students learning the equations of electricity in wires are referred to the analogy of water flowing through pipes. The reader may be able to think of other examples of the octivity principle.

New Problems

As might be expected, the attempt to arrive at a more subtle understanding of the 5FF raises fresh problems. There are two major problems with the above reconciliation of Brahmacakra and modern physics. Firstly, it offers no explanation of what the Tanmatras might be; and secondly, it attempts

to match the Bhutas, which are pure wave phenomena, with physical particles. This is an awkward matching.

Thinking of matter as composed of particles is an easy way for the lay person to make an entry into the esoteric realms of modern physics. Particles can be conceptualised by the mind, and they have become part of our mental conditioning, part of our world view. However modern physics is in the process of demolishing the particle concept; matter is no longer particular and concrete, rather it is becoming increasingly diffuse and abstract. According to modern physics and also to Ananda Marga philosophy, matter is just a concentrated form of energy and energy is just a kind of motion, or vibration. If we are to relate Brahmacakra to modern physics, we have to break with particle conditioning and totally rethink our conception of matter. It will no longer be possible to construct literal images in our minds of matter but we can attempt simple analogies. Once we break with particle conditioning we are in a much better position to discover the correspondence between Brahmacakra and modern physics.

Matter as Wave and Particle

Imagine you are sitting at the tip of a promontory overlooking the sea. In front of you is a turbulent patch of water where ocean waves from the north, north-east and north-west meet and interact. Where two crests meet, they add to give an extra high peak and likewise two troughs combine to give an extra deep trough. Imagine further that where two waves meet, the peak is capped by a spot of white foam. If you squint your eyes, the waves disappear and all you can see are the dancing foam caps, appearing, disappearing, merging splitting and bouncing off one another; that is, a complex pattern of interacting white particles is apparent. Open your eyes and the wave forms underlying the particles become obvious.

This imagery is a good first approach to understanding the wave-particle relationship. Note two points; firstly a particle is formed only where two waves meet; secondly a particle does not have any substantial or independent existence. As two moving waves intersect, the foam cap or particle is dissolved and

reformed in every instant. It is entirely dependent on the underlying order of waves.

Physicists refer to the world of particles as the explicit order and to the underlying world of waves as the implicit order. The existence of a particle is enfolded in the implicit order even before it appears in explicit form. Physicists are just beginning to appreciate that the implicit order is the object of real interest and that the explicit order is merely a show.

In the above imagery, the 5FF are the ocean waves with shortest wavelength while Citta or mind stuff may be thought of as waves of longer wavelength. ("The Bhutas are not any new stuff but only the crudified forms of Cosmic Citta...". "Idea and Ideology" p. 23). The ocean water itself represents Cosmic Consciousness, the stuff of creation.

The white foam caps, the world of particles, represent the Tanmatras. The Bhutas and Tanmatras will now be explained in turn, beginning with liquid factor since the principles involved were first discovered and are best introduced at this level.

Liquid Factor

The classical picture of an atom at the beginning of the 20th century was of one or more electrons revolving in fixed orbits about the nucleus, much as the planets revolve around the sun. Later it was thought that the electrons orbited in spherical shells. Next it appeared as if the electron did not remain a discrete particle but formed an electron cloud. Finally it was understood that the electron cloud was a standing wave pattern; that is, a pattern of energy in its own right quite independent of any particle structure.

When a guitar string is plucked, the string vibrates as a one dimensional standing wave with various harmonics. When a drum is struck, the skin vibrates as a two dimensional wave with various harmonics. An electron cloud may be thought of as a three dimensional standing wave. It is described mathematically by a Shrodinger Wave Function. Physicists make no attempt to describe what it is that vibrates. In fact all the wave function does is to describe the probability of finding an electron at a particular point around the nucleus should we

choose to look for one. This last qualification is important. The Wave Function says nothing about what there is in reality and nothing about what there is when do no choose to look for an electron. Quite obviously a probability is not a thing—it is an abstract concept—yet according to Quantum physics, tha Wave Function describes everything that we can possibly know about matter at the atomic level using the methods of physics, that is, sensory observation.

Although they describe only probabilities, the Shrodinger Wave Equations have a mathematical structure typical of wave dynamics; hence the concept of matter as a standing wave. Furthermore the equations must describe an energy field of some kind since an electron appears when we choose to look for one. Yet the Shrodinger Wave Function does not describe any particular thing that exists—it describes only a potential to exist. Says Heisenberg, the wave function is a "strange kind of physical reality just in the middle between possibility and reality." It is more than an idea, but less than a substance. It is a meta-physical entity. There are all sorts of philosophical problems here, some of which will be referred to in a later chapter.

If an electron standing wave is merely an abstract entity, how did the notion of an electron particle arise in the first place. Commonsense tells us that when we turn our back on a moving car it may still be coming for us even though we cannot see it. But at the atomic or quantum level, commonsense is no longer reliable. There is no electron particle around a nucleus until we choose to look for one. We look for one by shooting a photon, an observing wave function, in the vicinity of the electron wave function, the observed wave function. The interaction of these two wave functions creates an electron particle which the observer detects with their senses via scientific instruments. So paradoxically an electron appears only when we attempt to look for one. According to Quantum physics, our mistake was to assume the particle was still there when we were not looking. Such an assumption leads to intractible contradictions.

It will now be apparent that the electron particle fits the Brahmacakra description of a Tanmatra, while the Shrodinger Wave Function describes a pure wave form or Bhuta of

liquid factor. The standing wave is not itself seen. The electron arises from the interaction of a subtler wave or photon with a cruder wave or liquid standing wave. In some paradoxical fashion the electron is both a particle and a wave phenomenon. The electron has no dimensions—it behaves as a point in space—this is its particle character. On the other hand it also has various vibrational or wavelike qualities such as spin, mass and charge. It is these wave characteristics that are detected by the sense organs of the observer via instruments. The standing wave function is the implicit order out of which arises the visible or explicit order, that is the electron particle. In terms of our earlier ocean imagery, the standing wave function is the ocean wave and the electron particle is the white foam cap that forms where two ocean waves meet.

With the Tanmatra particle you might think we have at last something concrete and dependable. But no ! Philosophically speaking, Quantum mechanics forces us to rethink the notion of independent existence. For example, the electron particle in the above example did not exist until a scientist made the attempt to observe one. The electron did not have any independent existence—it was created through the process of observation. In short there would not be Tanmatras or particles except that we create them through sensory observation. Such is the subtlety of Quantum mechanics. There is an obvious parallel here with Ananda Marga philosophy. Objects find their substantiation only through witness-ship. Without a witnessing entity an object ceases to exist. Quantum physicists will say that even an object as substantial as a hammer has no existence apart from the human experience of it. They are therefore forced to ask the question who witnesses and thereby activates the universe ? This is a subject of some controversy ! In Ananda Marga philosophy, the witnessing entity must be more subtle than the observed entity. The universal witness must therefore be Cosmic Consciousness because it is the One Entity without vibration; the One Entity which cannot be witnessed. It is the entity which physicists have tried their hardest to avoid yet which the logic of Quantum physics demands.

To summarise: liquid Bhuta is the electron standing wave which forms around the atomic nucleus and binds atoms toge-

ther into molecules and macromolecules. Liquid Bhuta is the dominant substance in everyday human existence. The liquid Tanmatra is the dimensionless electron particle. The electron particle has a variety of vibrational properties, in particular mass, spin and charge.

Solid Factor

The quark may be thought of as a standing wave form. It has very small dimension, about 10^{-15} m diameter, and has therefore extremely short wavelength. Quark standing waves do not appear to exist in isolation like atoms—rather they are bound together in twos and threes to form mesons and protons etc.; that is the proton is a 'quark molecule'.

An isolated quark, Tanmatra or particle would be expected to be dimensionless but one has never been observed. To produce an electron Tanmatra from an electron standing wave requires an amount of energy. To produce a free quark Tanmatra requires more energy than today's particle accelerators can produce, and indeed some physicists theorise that it may be impossible. Nevertheless the vibrational qualities of the quark Tanmatra can be inferred from experiments. In addition to spin charge and mass, quark Tanmatras also have the properties of 'flavour' and 'colour charge'.

Solid factor is the world of nuclear physics. Interestingly, physicists believe that nuclear matter can possibly exist in three states that mirror the gaseous, liquid and solid states of atomic matter. Here we are talking of states of matter, not Bhutas. Protons and neutrons can be bound in a crystalline state—their normal state is liquid—and they can be boiled in high energy collisions.

Etherial Factor

We now turn from the smallest dimensions in the universe to the largest. Etherial factor is space-time and is to some extent a theoretical concept. According to classical physics, matter is distinct from, but exists within, a vacuum and we give the

dimensions of space and time to that vacuum. However according to Einstein's Theory of General Relativity, space-time cannot be separated from matter. When asked by a journalist to summarise his work in one sentence, Einstein said, "Well, just as a joke and not to be taken too literally, relativity has this effect on any thought of the universe: up to this time the conceptions of time and space have been such that if everything in the universe were taken away, if there was nothing left, then there would still remain to humans, time and space. But under my theory, even space and time would cease to exist, because they are inseparably bound up with the conception of matter." In General Relativity, space-time has the properties of a field that is, it is a wave phenonmenon. Matter is condensed portions of the field.

What is the standing wave function of etherial factor ? It is reasonable to speculate that it is nothing other than the space-time field of General Relativity. Its largest dimension is the universe itself.

P. R. Sarkar refers to a particle called the etheron and we may infer that this is the Tanmatra particle of the space-time standing wave. Such a particle has not yet been discovered.

The universe—space-time—is expanding equally in all directions. Cosmologists infer this from measurements of red-shift in the light coming from galaxies. This expansion is not easily apprehended by the human mind. Imagine an ant walking on the surface of an expanding large balloon. The ant lives in a two dimensional world which is expanding in three dimensions. We live in a three dimensional world which is expanding in four dimensions, that is, space-time. The universe has a centre or nucleus but it is not a physical place that we could visit anymore than the ant can visit the centre of its balloon.

Cosmologists debate whether the universe will expand forever or whether it will one day begin to contract. What will happen depends on the amount of matter in the universe. If there is a sufficiently large amount of matter, then gravitational attraction will eventually cause the universe to contract just as a ball thrown into the air must eventually begin to fall. Best estimates at present suggest that there is only 1% of the necessary mass to cause the universe to contract, in which case

the thermal death of the universe is inevitable. Sarkar says that this will not happen, implying that gravity or Prakrti will halt the expansion. Interestingly, Sarkar also says that the universe is egg-shaped. This is precisely the closed shape that cosmologists predict the universe should have if it is to one day contract.

Ether is a wave function, which is to say that it is a field of vibrating energy. We have already observed that the ether vacuum can give rise to a sea of virtual particles, even virtual protons. Although the ether appears to be nothing, it is in fact the source of a prodigious amount of energy. Theoretical physicists have calculated that there is sufficient energy in the vacuum state to give rise to particles many millions of times more dense than the quark. The energy of our visible universe therefore lies latent in the ether.

Aerial Factor

When galaxies were first discovered only some 40 years ago, they changed our conception of the universe. In the last two years, a detailed study of galaxies is changing our conception yet again. The spiral arms of some galaxies rotate in such a way as to suggest they are under the influence of a gravitational force far more powerful than can be explained by the star-mass of the galaxy. It appears as if the visible galaxy is embedded in a massive 'halo' of another type of matter which can be felt but not seen. To account for this astronomers have to postulate the existence of a new type of matter called 'dark matter'. Dark matter exerts gravitational pull but does not interact with light photons. Dark matter has taken astronomical circles by surprise because it has always been assumed that all matter was visible, directly or by way of instruments. The significance of dark matter, apart from explaining the behaviour of galaxies, is that it might well account for the 99% of matter that is 'missing' from the universe.

From the perspective of Brahmacakra philosophy, dark matter is not hard to understand. It is aerial factor, matter which carries touch Tanmatra but not light Tanmatra. If this is correct then we may conclude that the standing wave

function of aerial factor is the halo of dark matter which surrounds galaxies. What is the Tanmatra of aerial factor ? There is only one particle type known to physicists which does not interact with light and that is the mysterious neutrino. The existence of the neutrino was predicted long before it was discovered, the problem being that the neutrino has so few properties. It travels at the speed of light, it has spin and it may have a tiny mass, less than a ten-thousandth of an electron mass. How can such a small and insignificant particle now be considered so important on a galactic scale ? Simply because there are huge numbers of them. Their combined mass may account for 99% of the universe that we did not previously know to exist.

One of the ironies of modern physics is that nuclear physicists who look at the smallest scale of matter, and astronomers who look at the largest scale of matter, now find themselves studying the same particle. Dark matter may be the template upon which the galaxies, the visible members of the cosmos, are laid down. Its huge and as yet uncharted bulk is a distortion of space-time and would determine the internal structure of the universe.

There may however be aerial Tanmatras other than neutrinos. Astronomers have discovered that galaxies tend to gather in clusters and the clusters gather into super-clusters. These clusters are 'molecules' on a galactic scale. Dark matter is thought to bind galaxies into clusters the same way standing electron waves bind atoms into molecules. From observing the behaviour of galactic clusters, astronomers can determine what sort of properties the dark matter particle or aerial Tanmatra should have. The results tend to discount the neutrino. A particle with more mass and less speed is required. Nuclear physicists working at the opposite end of the size spectrum are now hunting around for other dark particles. Theoretical studies suggest the existence of photinos and axions. These are exciting times for physicists !

Luminous Factor

The emerging pattern of reconciliation between Brahmacakra and modern physics seems to demand that the luminous

factor be in some way connected with stars. Stars are the only non-living structures intermediate in size between galaxies and atoms. Furthermore, in descending the scale from universe to galaxy to star to atom, the star is the first structure in which the production of light is an integral part of its structure.

For the present time it is proposed that the luminous standing wave is the powerful electro-magnetic field which surrounds a star. By analogy with dark matter, the e-m field may be the template upon which the star structure is laid down. The Tanmatra of luminous factor must therefore be the photon which has properties of spin and e-m vibration. Photon is not equivalent to luminous factor. It behaves as both particle and wave.

The problem with equating luminous factor to e-m fields is that the e-m field is a force field and photon is a force particle as opposed to a matter particle. All the other factors have been equated to matter fields. In a recent theory called "Super-symmetry", physicists propose that every matter particle has its twin force particle. The twin to the photon is the photino but it has not yet been found. Clearly this is a problem area which awaits further developments in physics.

The Nested Universe

From the foregoing discussion, it is apparent that the five Bhutas are nested one within the other. Starting at the smallest end, groups of solid standing waves or quarks are nested within liquid standing waves or atoms. Groups of atoms are nested within stars, groups of stars within a galaxy and groups of galaxies within the universe. See Figure 1. It is entirely possible that more than one universe is nested within the Cosmic Mind.

It should not be thought that aerial factor mainfests itself only at the level of galatic structures. Sarkar explains how aerial and even etherial factors are associated with the human body and can have a nucleus within the human body. These may perhaps be viewed as higher frequency harmonics of the aerial standing wave. Perhaps the radionic fields described in a variety of alternative medicines are human aerial factor.

This is a largely unexplored field of study. The same observation may be made of luminous factor, although e-m fields around the human body are now regularly measured by orthodox medicine as in brain scans.

In descending the scale from the universe down, we observe that billions of new objects are created at each step. The universe contains billions of galaxies ; each galaxy contains billions of stars an so on. Hence the process of Saincara, the forma-

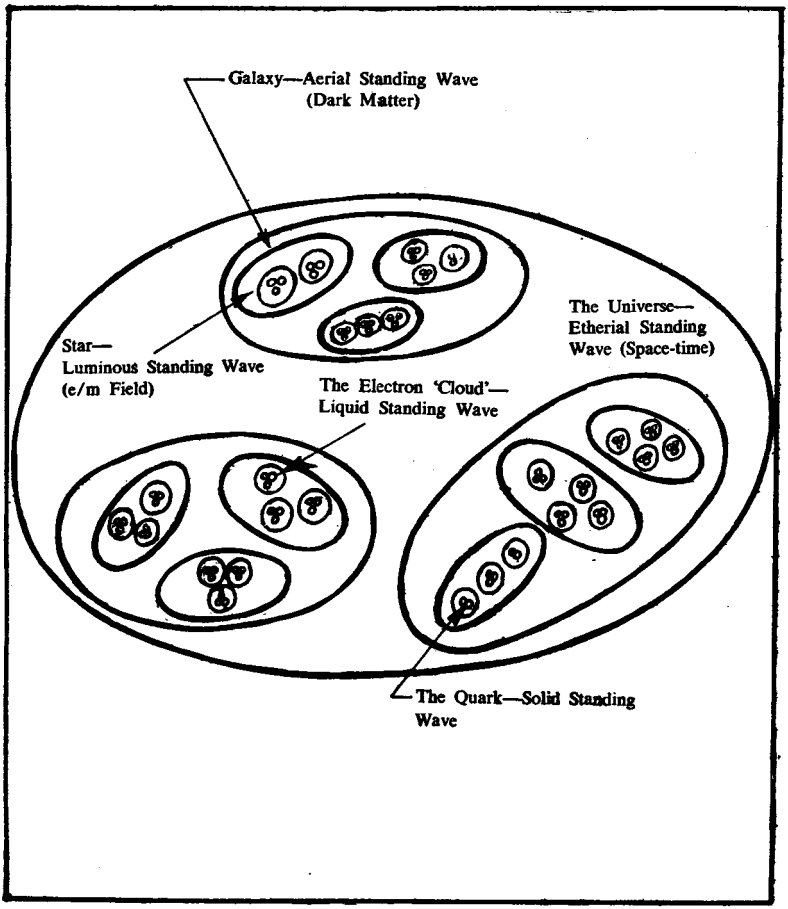

Fig. 1. The Nested Universe

tion of cruder Bhutas from subtler Bhutas, is analytic breaking into numerous smaller parts. Aerial factor must not be equated with a galaxy nor luminous factor with a star etc. Galaxies, stars and atoms are all composite structures but it appears as if the structure of each is laid down on a template formed by the respective Bhuta. The distribution of stars in a galaxy for example. is determined by the template of aerial factor.

THE STRUGGLES OF MATTER

The first chapter of this part was concerned with giving an overview of the Five Fundamental Factors, Tanmatras and making a reconciliation between the philosophy of Brahmacakra and the discoveries of modern physics. This chapter deals with certain specific phenomena that P. R. Sarkar describes in his account of Saincara and Negative-Saincara.

The Four Forces of Nature

Four forces have been observed at work in nature: gravitation, weak nuclear force, electromagnetism and strong nuclear force—in order of increasing strength. The holy grail of modern physics is to unite all four forces into a single mathematical description and understand them as different mainfestations of the one force, which in Brahmacakra is called Prakrti. This ambition is known as Grand Unification Theory or G.U.T. for short. There are two approaches to G.U.T. The first is to describe each force as an exchange of particles; the second is to describe the forces as distortions of space-time. The first approach has been successful in unifying the three strongest forces but gravity has remained recalcitrant. The second approach, known as 'super-gravity', begins with gravity, and the other forces emerge out of gravity.

Einstein's greatest achievement was to describe gravity as a distortion of our dimensional space-time. Massive objects distort the structure of space-time about them. The earth revolves around the sun not because the sun pulls it but because the sun distorts space-time in such a way that the path of least resistance for the earth is a groove in space-time around the sun.

The next discovery on the road to super-gravity was that gravity and electromagnetism could be united if a fifth dimension was added to space-time. Most recently theoretical physicists have proposed that our universe has eleven dimensions

because this number is required to unite all the forces into one description. We cannot of course imagine an eleven dimensional space, yet physicists are tremendously excited by it because the grand unification it achieves has an intuitive appeal. It answers so many questions. In the words of one cosmologist, "It (G.U.T.), is so pretty, the feeling is that somehow it has to be right." Super-gravity is a theory still in the making; yet it has gripped physicists in another fever of excitement.

If the universe has eleven dimensions, then why do we only perceive four, space-time? Space-time, as we know, is curved and closed in on itself, that is, it is egg shaped. Similarly, the other seven dimensions are also closed on themselves but so tightly that they have curled up into balls about 10^{-33} m in diameter. The hidden seven dimensions permeate space-time, and although invisible, their residual effect is to convert gravity into three stronger forces.

In Brahmacakra philosophy the forces of nature are also described as distortions of space-time. For instance, Sarkar writes that "The pressure and domination of the static principle (of Prakrti) continues increasingly (on etherial factor), and as a result of this increasingly external pressure, the external space within that structural scope goes on decreasing gradually. There is also simultaneous increase in chemical affinity." ("Idea and Ideology", p. 5). This can be represented diagramatically in a simplified form using a rubber diaphragm as in Figure 2.

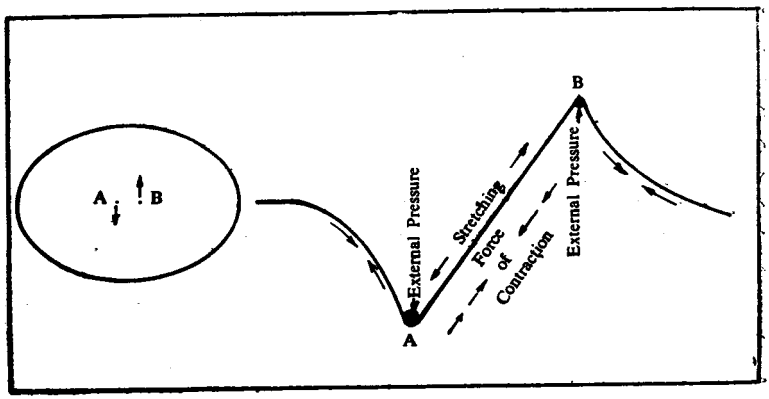

Fig. 2. Distortions of Space-Time

The effect of applying pressure at A and B is to stretch the diaphragm. Because rubber is elastic, at any point there will be a force of contraction equal and opposite to the degree of stretching. It is possible to map out a field on the diaphragm which records the contraction force at any point. The effect of the total field is a reaction to, and an attempt to negate, the externally applied pressure. For example, the contraction force will bring points A and B closer together if the external pressure is relaxed.

Applying this analogy to the physical world, the etherial standing wave may be thought of as an elastic diaphragm. The compressing force of Prakrti creates aerial standing waves at points A and B. It is as if Prakrti collects some of the etherial elastic fabric and compresses it into a ball. This generates stretching or distortion far out into the etherial standing wave which is perceived as a gravitational field or the chemical affinity in Sarkar's passage. Note that the gravitational field is a result of the elastic property of the etherial standing wave which attempts to resist the action of Prakrti and return to its undisturbed state of equilibrium or symmetry. Physicists now understand each of the four forces of nature as a response to a disturbed symmetry.

In a similar manner, the weak force, the electromagnetic force, and the strong force arise as Prakrti continues to compress and create the cruder fundmaental factors. A simple model is suggested in Figure 3.

The weak nuclear force field is a distortion of, and within, the aerial standing wave, but unlike gravitation it has an extremely short range, that is, millionths of a centimeter. The e-m force field is a distortion of, and within, the luminous standing wave, hence the reluctance in the previous chapter to equate elcetromagnetism directly with luminous factor. E-m is distorted luminous factor. Finally the strong force field is a distortion of, and within, the liquid wave.

Note that as the external pressure of Prakrti becomes stronger in order to effect greater compression, the corresponding force field also becomes much stronger—the force fields are an equal and opposite reaction to the compressional force of Prakrti. Prakrti in this role as external compressor is known as Bala. Note also that the force fields persist within each lower level. For example, gravitational force exists even within the nucleus but

its strength is so miniscule compared to the strong nuclear force that its presence can effectively be ignored.

In the super-gravity approach to Grand Unification, there are other dimensions besides space-time. The distortion of these dimensions gives rise to the other force fields besides gravity. For example, the luminous standing wave may be thought of as a kind of five dimensional 'charge-space'. The action of Bala is to create liquid standing waves which have negative and positive charges. Electromagnetic fields are distortions of charge-space around the charged liquid wave.

The distortion of a standing wave can be compared to a mountainous topography. For example, the shortest walking route through mountainous country will not be a straight line as drawn on a map. Deviations will have to be made to by-pass valleys and peaks. So too the shortest passage for a celestial body passing through a cluster of stars or galaxies will not be what we perceive as a straight line. Due to the distortions of space-time generated by the presence of stars or galaxies, the

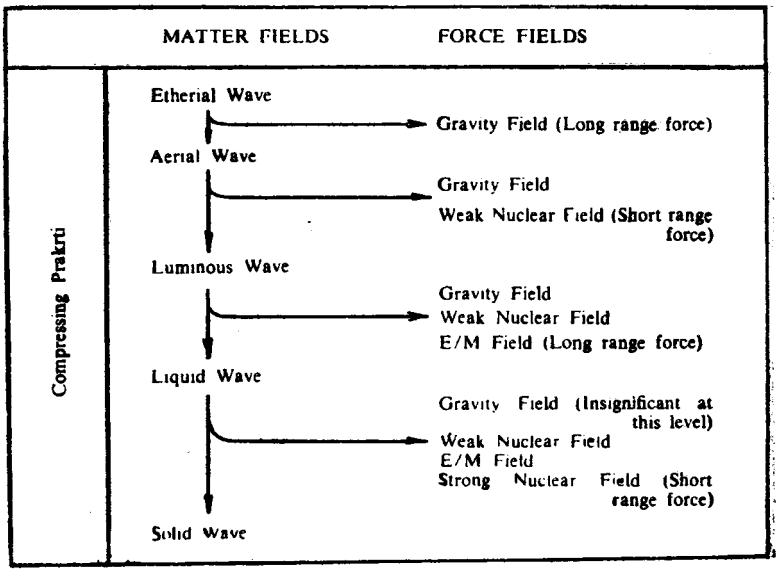

Fig. 3. Prakrti Compressing the Five Fundamental Factors

celestial body will be deflected to one side and then the other. These deflections we describe mathematically as the force of gravity. The celestial body in its passage merely follows the shortest passage, or the path of least resistance.

The scheme in Figure 3 is offered tentatively because, although it ties together the 5FF and the four forces of nature into a neat and tidy package, it is certain to be a gross simplification. In particular, the weak force does not comfortably fit into the scheme; but this is a problem for the future. (It is both an advantage and a defect of science that it can progress by ignoring minor difficulties and contradictions—at least until they become too big to ignore !)

In addition, physicists are already proposing the existence of other natural forces, as yet undetected. For example, if all the particles and known fields are removed from a vacuum, still some kind of force field is thought to remain. It has been named the Higgs Field and may fit into our scheme as indicated in Figure 4.

The Higgs Field is required to explain certain phenomena at the sub-atomic level. Some of the forces physicists discover may be direct descriptions of Bala on compressing Prakrti rather than the effect of Bala. The above scheme is therefore offered only as a tentative model to show how the known force fields may arise out of the compressional action of Prakrti on the elastic fabric of the 5FF.

Tanmatras and Fundamental Particles.

In Brahmacakra philosophy, the 5FF arise from one another in a sequence: ether → aerial → luminous → liquid → solid. Is

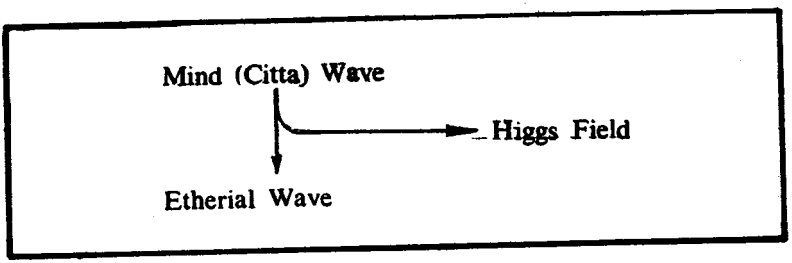

Fig. 4. The Higgs Field

some similar sequence observed in experimental physics ? The short answer is no, although the weak force can covert a neutrino into an electron and vice versa.

However in order to achieve the goal of Grand Unification, theoretical physicists have had to propose that neutrinos, electrons and quarks do belong to the one family and that they are different metamorphoses of the same particle. A further consequence of G.U.T. is that the three particles should be interconvertible. Given the properties of neutrinos, electrons and quarks, physicists have proposed a possible sequence by which they might arise from one another. See Figure 5.

If we remember that the particles are Tanmatras associated with the 5FF, then the sequence of particle generation is strongly

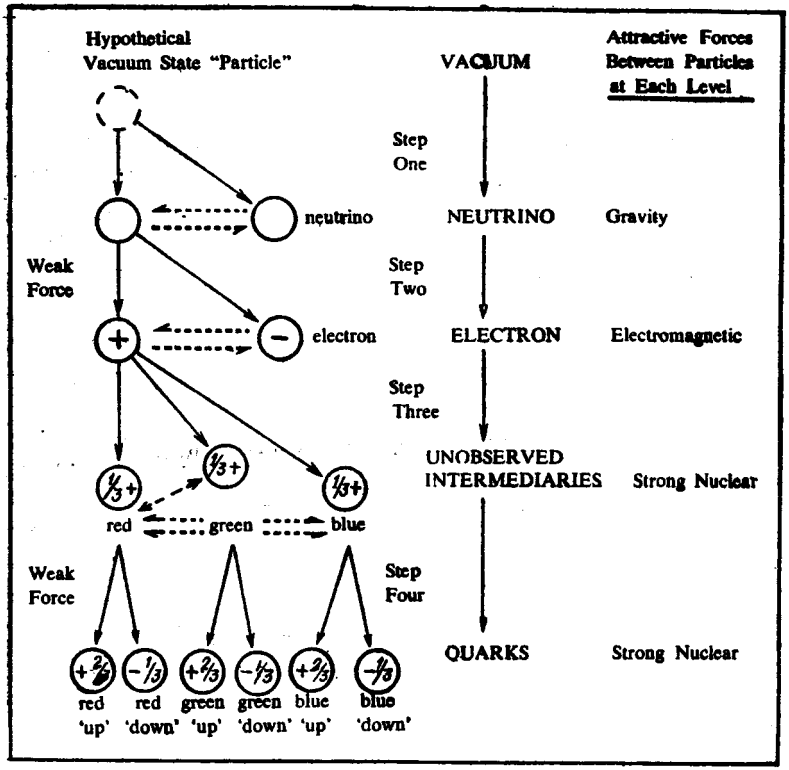

Fig. 5. Sequence of Particle Creation

reminiscent of the sequence of factor generation. Only Luminous Factor is missing. The sequence generates eight particles from one primordial 'particle': a neutrino, an electron, three 'up' quarks, each with different colour charge, and three 'down' quarks. Note that the combined charge of the eight particles is zero. Their combined 'colour' charge is 'white', that is, zero. Figure 5 also lists the attractive force between each particle type and the possible role of the weak force in steps 2 and 4. This Figure can be compared with Figure 3.

Figure 5 also reveals why quarks have their characteristic fractional charges and why they are bound in groups of three into protons and neutrons.

If Figure 5 is confusing to those unfamiliar with modern physics, then simply let it pass. The main point being made in this section is that physicists are discovering sequential patterns in the properties of fundamental particles which may well be associated with the sequential devolution of the Five Fundamental Factors.

One more correspondence between Tanmatras and atomic particles must be mentioned. The 5FF themselves are not known to us directly. They are inferred through the medium of Tanmatras which have the capacity to stimulate our sense organs. Figure 6 lists the Tanmatras and the respective senses they stimulate. In the same way, the sub-atomic particles that physicists study are known to us only through their properties such as spin, mass and charge etc. We would therefore expect to find some relationship between Tanmatric sensory properties and the physical properties described by physicists.

The properties of the three matter particles, neutrino, electron and quarks, form a sequence of increasing mass and range of properties. This is further evidence of the sequential correspondence between Tanmatras and fundamental particles. It is tempting to tie in the sense of touch with the property of spin and the sense of taste with the property of charge. If however we include the force particles, graviton and photon, the sequence becomes more complicated.

The graviton has not yet been observed despite a tremendous and expensive research effort. But there is no reason to doubt its existence. The graviton would have no property other than the compression and expansion of space-time though it may

also have spin. The graviton is a space-time vibration and it may be equated with the Tanmatra of etherial factor. The capacity to vibrate is clearly linked with the sense of sound.

The photon is an electromagnetic vibration and also has the property of spin, which is clearly connected with the sense of sight.

A better clarification of the relationship between Tanmatras and fundamental particles must await further developments in experimental physics.

Prana

Objects such as galaxies, stars and atoms are compound structures; that is, they are composed of many parts. These objects are nevertheless stable because their many parts are bound by the four forces of nature. All such stable compound objects have a nucleus around which their outer parts revolve. The nucleus consists of extremely dense matter as compared to the peripheral parts of the object.

BHUTA	TANMATRA	PARTICLE	TYPE	PROPERTIES
Etherial	Sound	Graviton	'Force'	Space-Time Vibration, Spin
Aerial	Sound Touch	Neutrino	'Matter'	Minute Mass, Spin
Luminous	Sound Touch Sight	Photon	'Force'	E/M Vibration, Spin
Liquid	Sound Touch Sight Taste	Electron	'Matter'	Small Mass, Spin, Charge
Solid	Sound Touch Sight Taste Smell	Quark	'Matter'	Large Mass, Spin, Charge, 'Flavour' and 'Colour Charge'

Fig. 6. Bhutas, Tanmatras and Their Relationship with Physical Properties

The stability of compound structures is dependent upon the play of opposing interial and exterial forces. Interial forces have their focus on the nucleus and serve to bind the structure together. Exterial forces, directed onwards, have a disintegrating effect. A stable structure forms where the interial forces win over the exterial forces.

The forces of nature in their attractive mode are all interial forces. Each attractive force also has its exterial counterpart. For instance, the force of inertia and rotational and kinetic

STRUCTURE	EXTERIAL FORCES	INTERIAL FORCES
Galaxies and Stars	Radiation (in Star) Rotational Energy Kinetic Energy of Constituents	Gravity
Atoms	E/M Repulsion of Electrons	E/M Attraction of Electrons and Protons
Nucleus	E/M Repulsion of Protons	Strong Force Attraction of Quarks

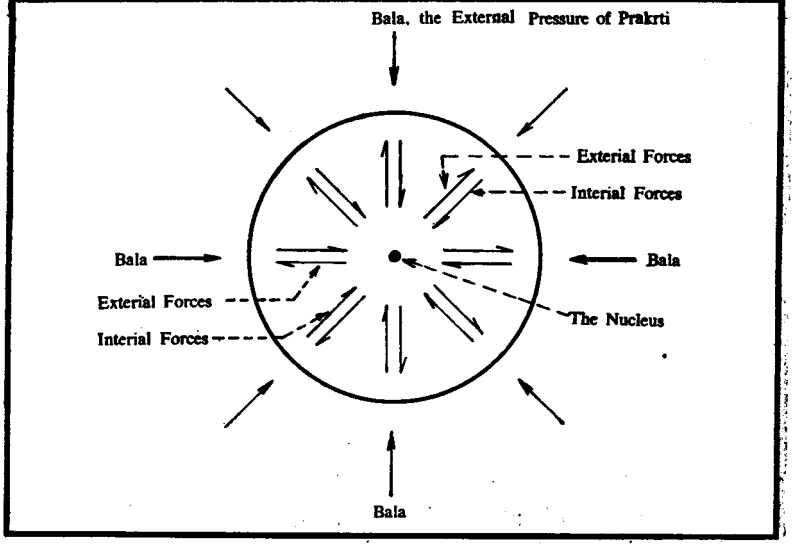

Fig. 7. The Interplay of Interial and Exterial Forces

energies of constituent particles act as an exterial counterpart to gravitational attraction. Like-charge repulsion is the exterial counterpart of the attraction of unlike charges. The same occurs with the colour charge of quarks. Weak force however, is not easily incorporated into this discussion.

The role of the major interial and exterial forces in maintaining the structural integrity of galaxies, stars and atoms is shown in Figure 7.

In Brahmacakra philosophy, this interplay between the interial and exterial forces is known as Prana. Prana is "the eternal game between the Cosmic Cause and its crudest effect". ("Idea and Ideology" p. 6). The term Prana is used synonymously with energy and dynamism and helps to create each of the force fields.

In a biological sense Prana is nothing but a developed form of Pranendriya, which is a complex combination of ten vital airs called Vayus (and are Prana, Apana, Samana, Udana, Vyana, Naga, Kurma, Krikara, Devadatta, Dhanainjaya). These Vayus operate in different parts of a biological structure providing energy and activating other physico-psychic processes. The entire collection of vital airs is nothing but the vital energy of the biological structure. The wear and tear experienced by the physical body is compensated by the Prana we acquire from food, light, air, water etc. The collection of Prana is called Pranah or vital energy.

Prana is also the link between mind and matter; thought processes give rise to Prana. Prana in turn is not only a force field acting on matter, but gives rise to matter itself. In fact, Prana is nothing but aerial factor.

Jadasphota

If an imbalance occurs in a compound structure such that the exterial force dominates, then the structure will disintegrate. This process occurs as a result of a complex sequence of events. Due to Bala, the external force of Prakrti, the chemical affinity between particles increases, the physical structure is reorganised and the number of atoms increase. Consequently, the interatomic and intermolecular space decreases. A stage is reached

where there is no further scope for contraction because there is no more interatomic and intermolecular space. If the exterial force of Prakrti continues to exert pressure, a point comes where the exterial force overcomes the interial force and the structure explodes apart, causing the instantaneous destruction of the object. In Brahmacakra philosophy this is called instantaneous Jadasphota, and can only occur in dead or dying celestial bodies. Jadasphota gives rise to particles smaller or more subtle than the parent structure. Gradual Jadasphota occurs when, due to the exterial force, dissociation occurs slowly in some portions of the structure, causing the gradual breaking up of the object.

Stars provide an excellent example of Jadasphota. Stars begin life as gas clouds of hydrogen and helium collapsing or contracting under their own gravitational weight. At this stage, interial force is dominant. Gradually the pressure and temperature of the cloud's nucleus increase until fusion reactions are initiated (hydrogen is fused to form helium) with a consequent enormous release of exterially directed radiation. This radiation prevents further collapse of the star which will remain in a stable condition of gradual Jadasphota for as long as it has hydrogen fuel to burn. When all the hydrogen is consumed, the star collapses further under the weight of gravitation and increased temperatures and pressures in the nucleus cause the fusion of helium nuclei into carbon. When all the helium is consumed successive stages of compression result in the production of a succession of heavier elements such as oxygen, magnesium and finally iron. Having run out of fuel with which to maintain an exterial force, the star contracts violently and then explodes (supernova) blasting its rich array of heavy elements throughout the galaxy. Thus stars, with their fine tuning of exterial and interial forces, are the alchemists of the universe. If it were not for the play of prana in stars the chemical constituents of life would never be formed.

Physicists believe that the densest states of matter occur in black holes. The gravitational pull of a black hole is so great that not even photons of light can escape from them. Black holes are not to be confused with dark matter. Black holes are the densest or crudest material objects known; dark matter is the subtlest matter known. Black holes are thought to reside in the centres of most galaxies including our own. Black holes have

never been directly observed although there are sound reasons for believing they exist. Until recently it was thought that nothing could ever ecape from a black-hole; they were the ultimate plug-hole into which the entire matter of the universe would eventually disappear. More recently however, there is evidence to suggest that black holes can radiate energy by way of virtual particles (gradual jadasphota) and that their ultimate fate is to explode (instantaneous jadasphota). Such an explosion has never been observed and it would spell the end of any galaxy that was involved !

In Brahmacakra philosophy, Jadasphota, either gradual or instantaneous, is described as the dissociation of solid factor into subtler factors—liquid, luminous, aerial and etherial. An important restriction is that Jadasphota does not give rise to any particle or form subtler than ether. The significance of this restriction will be discussed in the later section on the speed of light.

The Big Bang

It is well known that the universe is expanding equally in all directions. If the paths of the expanding galaxies are extrapolated backwards, they merge in a central point called a space-time singularity, some 10 to 20 billion years ago, at the present best estimates. It appears as if the universe began as a huge explosion or big bang. Note that the galaxies did not explore into space at some point in time; rather space and time themselves exploded into existence and began from that singularity. Space, time and matter cannot be separated.

The universe is a compound structure whose parts are moving away from one another. This is consistent with the fact that the universe has no physical nucleus in physical space. Its nucleus is the Macrocosmic Nucleus which exists beyond space and time because space and time are conceptions of the human mind.

Scientists believe that they can accurately describe the evolution of our universe back to within a few micro-seconds of the big bang, when all that existed was an incomprehensibly dense fire-ball of particles and radiation changing one into the

other. However, in Brahmacakra philosophy the big bang is not the point where the universe starts. The universe started with the initial creation of the 5FF from Cosmic Citta, while the big bang is a Jadasphota of Cosmic proportions.

For the following reasons it appears as if the big bang was a Jadasphota. Firstly, even within milli-seconds of the big bang, radiation, electrons, protons and much heavier (cruder) particles existed. Due to the enormous temperatures none of these had any stable existence. As the universe cooled, first protons and neutrons 'condensed out', then electrons, one second after big bang. After four minutes helium nuclei form and after some 700,000 years complete atoms form, that is, there is no apparent sequence from ether to solid. Solid factor, although unstable, exists from the very beginnings. If anything the fundamental factors appear in the reverse order since stars and galaxies are not formed until much later. Secondly, Jadasphota results in the splitting up of a physical structure into innumerable smaller and subtler particles. This describes the big bang.

P. R. Sarkar has recently explained that at critical turning points in the cycle of Brahmacakra, a tremendous force is required to advance the cycle. For instance, the creation of Cosmic thought vibration within Cosmic Consciousness does not occur quietly. Rather, a tremendous force is required which results in Caetanyasphota, an explosion of Consciousness. This gives rise to the Cosmic Mind. Similarly the creation of the 5FF is by way of an explosion in the Cosmic Mind known as Manasphota. Jadasphota is also the result of tremendous pressure but here the effect is a back-reaction, a tendency to create more subtle substances. Jadasphota is the final protest of Consciousness against the crudifying effect of Prakrti.

By contrast, it appears as if the initial creation of life is a quiet affair. However, this is also accompanied by tremendous clash but on a microscopic level—more on this later. According to Sarkar, even the merger of the unit mind with Cosmic Consciousness requires an explosion. Intense force is required wherever Consciousness must cross some critical threshold. See Figure 8.

The evidence suggests that the initial creation of the 5FF, Manasphota, was something different from the big bang, which has the characteristics more of Jadasphota. The 5FF would

have been created in sufficient quantities to account for the known mass of our universe. We cannot say anything more about the universe at this time. Perhaps it might have been familiar to us—but it might have been a totally different kind of physics. Whatever existed, etherial factor was created first, and inherent in the etherial factor are the other four factors in potential form. These factors gradually developed from etherial factor. The big bang or a Jadasphota of Cosmic proportions could only be possible after the formation of solid factor, hence the big bang theory cannot explain the origin of the universe; it only represents an upheaval in the universe during the course of its existence.

New stars are being born all the time, their births being triggered by the death of old stars in a super-nova. During its life time a star expands and contracts many times, each new contraction creating a new chemical element in the stellar nucleus. Super-novae explosions spread these elements around the galaxies. We observe therefore, that Cosmic evolution is not a simple linear sequence of events. The compressing and crudifying force of Prakrti waxes and wanes, each successive cycle producing some new state of matter, some new element or some new complex physical structure.

Entropy

There is a tendency in nature for all forms of potential energy, whether chemical energy, nuclear energy or gravitational energy, to eventually end up as heat energy. In addition, heat energy flows from regions of high temperature to regions of low

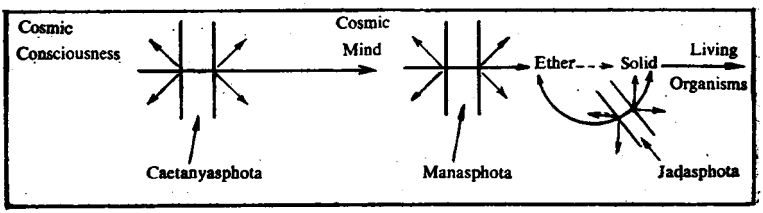

Fig. 8. Explosions in the Process of Saincara

temperature. This tendency for potential energy to dissipate as heat is known as an increase in entropy. From a statistical point of view, entropy is a measure of randomness. In the absence of any outside influence, a composite structure will tend to change from an ordered state to a disordered state; that is from a state of low probability to a state of high probability. The second law of thermodynamics states that entropy increases with time. This is an inherent property of matter.

The tendency for entropy to increase is the impulse behind most chemical and physical changes. It can be a very strong impulse. We cannot imagine for example, a gas confining itself to just one corner of a flask. A gas will always expand to occupy the maximum possible volume. This is the effect of entropy. Imagine two flasks joined by a stop-cock; one containing nitrogen, the other chlorine. When the stop-cock is opened the gases will spontaneously mix; another effect of entropy. In scientific language it is said that the initial state of the gases being separated is highly improbable while the mixed state is more probable. See Figure 9.

The concept of entropy has entered popular consciousness because the universe is often thought to be a closed system. If such were the case, then in the absence of any external influence, the entropy value of the physical universe would increase inexorably, culminating in some uniform state where everything was at the same temperature; that is, the thermal death of the universe. In Brahmacakra philosophy, the physical universe is nested within the Cosmic Mind and is not therefore an isolated system. If ever we observe a system whose order appears to be increasing, such as a growing animal, then we have to assume that the system is not isolated and that some ordering

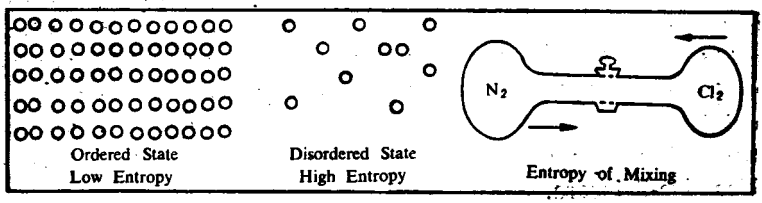

Fig. 9. The Effect of Entropy

force is at work. Such an ordering force is called neg-entropy, or negative entropy, and it has the effect of opposing entropy.

In general terms we may say that entropy describes a tendency of matter to resist being conrolled. Matter is anarchistic—it has an inherent resistance to being bound or structured in any way. In order to do so, some external ordering force must be applied.

Before we can incorporate the concept of entropy into the philosophy of Brahmacakra, it is necessary for us to name that which physicists have always been reluctant to name. Physicists are able to describe with great precision the vibratory characteristics of standing wave forms, but they cannot name what it is that vibrates. In spiritual philosophy the fundamental stuff of existence is Consciousness. Consciousness alone exists and that which vibrates is Consciousness. "In Ananda Marga philosophy thought or idea.....is only the crude manifestation of Consciousness under the influence of Prakrti.....Similarly energy or force .....is only a crude manifestation of thought.....Matter is bottled up energy". ("Subhashita Samgraha" p. 45).

Consciousness therefore can adopt a spectrum of vibrating forms ranging from the totally unbound to the maximally bound. Pure Consciousness is totally unbound; it has no vibration; it is totally without internal structure; it is in all places at once and hence omnipotent; it has infinite dimensions; it is the ultimate witnessing entity. In terms of entropy, Consciousness may be thought of as the state of infinite entropy.

The instant that vibration appears, Consciousness becomes to some extent bound. A degree of order or structure appears. As the force of Prakrti becomes stronger, Consciousness becomes increasingly bound. After passing through various stages or levels of mind and matter, finally the level of maximum bondage, order and structure is reached, solid crystalline matter. Crystalline solids at 0° Absolute Temperature are defined as having zero entropy. In Brahmacakra philosophy, the sequence of events by which Consciousness is bound and transformed into Cosmic Mind and the 5FF is known as Saincara, meaning movement from the subtle to the crude. The conversion of solid factor into the remaining four subtler factors after Jadasphota is known as Negative-Saincara.

Potential Energy and Desire

In the philosophy of Brahmacakra, the process of Saincara, the conversion of Unbound Consciousness into bound Consciousness, is described as analytic and centrifugal. There is also said to be an increase in desire. Each of these concepts is related. The analytic or splitting up characteristic of Saincara has already been described. Numerous cruder standing waves are nested within subtler standing waves to create a nested hierarchical structure. The five inner most levels represent a nested hierachical structure and represent our known physical universe, as outlined in the previous chapter.

In the first section of this chapter it was explained how the analytic action of Prakrti on an etherial standing wave gave rise to distortions which we observe as gravitational fields. Similarly other force fields appear as the compressing action of Prakrti continues. These fields are a manifestation of desire. Consciousness is non-attributional; the desires in creation are created by the action of Prakrti.

Finally the term centrifugal implies retreat from the nucleus; that is, the increasing influence of Prakrti on Consciousness. In what sense does the centrifugal action of Prakrti come within the observations of physicists? We can use Figure 5, depicting the sequence of particle creation, to answer this question. Notice that at each step some force, that is Prakrti, splits a particle into two or three different particles. A neutrino was split into two differently charged particles. A hypothetical vacuum state particle was split into two neutrinos which are different in that they occupy different points in space. The effect of splitting up, or analysis, was to create differences and separations between particles which in turn led to the generation of desire between them. The creation of difference and separations where there were none before is a manifestation of centrifugal action.

If we now apply the concepts of analysis, desire and centrifugal motion to physical phenomena in an intuitive way, we can make links between Eastern and Western cosmologies. For instance, the notion of desire can be linked to the physicists concept of potential energy. It is significant that Eastern cosmology makes use of human psychology to describe physical

phenomena, whereas Western cosmology confines itself to objective, mechanistic language. Eastern cosmology has always perceived the universe as a living entity, and in so doing it has achieved greater insights into the meaning of physical phenomena. On the other hand, Western cosmology has been able to quantitatively measure desire as potential energy. While it has lost touch with meaning, it has gained the power to turn physical phenomena to human advantage.

The concepts of desire and centrifugal force can be applied to simple everyday phenomena such as expanding gases and batteries. Take for example the two flasks in Figure 9 filled with air. The system is at equilibrium with the stop-cock opened. The stop-cock is closed and air in one flask is evacuated with a vacuum pump. Now a difference exists between the two flasks brought about by the centrifugal force of a vacuum pump. A desire is created which can be resolved by air opening into the empty flask. The entropy value of the equilibrium state is now greater than when a pressure difference existed.

A torch battery is manufactured in such a way as to separate and store negative and positive charges. The separation of charges requires a centrifugal force which is applied during the process of manufacture. There is an attraction or desire between the opposite changes. When the two poles of the battery are joined by a wire, a flow of electrons moves spontaneously along the wire. The total entropy of the battery increases. Once the battery is flat we say that the internal desire has been resolved.

A system which is spontaneously changing from an ordered, non-equilibrium, unstable, low entropy state to a disordered, equilibrium, stable, high entropy state has the capacity to do work. It has a potential energy which can be released to do work. For instance, a gas expanding into a vacuum is the principle by which vacuum brakes are able to slow down trains. A discharging battery can be used to drive a motor. The work done by a system discharging its potential energy can also be used to create other forms of potential energy. That is, desire can be transferred from one place to another. For example, the battery in the above example could be linked to a water pump which lifts water from a low place to a high place. In

fact, energy conversions can be linked in long chains as in Figure 10.

Note that this is not a perpetual motion machine because at each energy conversion there are frictional heat losses as some of the potential energy is dissipating as heat as per the Law of Entropy. Similar chains of energy transformations drive events at the Cosmic level, exemplified by the creation and destruction of stars, illustrated in Figure 11.

Stars begin life when a shock wave from an exploding star strikes a hydrogen gas cloud. This causes the contraction of the cloud in much the same way as the blast from an atomic bomb collapses the front wall of a house into its back wall. The contracting gas cloud then passes through its stellar life cycle as explained previously and ends life as a super-nova explosion. The shock wave from this creates new stars. Each energy conversion involves entropic losses and the emission of heat and light.

Notice that in each of these examples, the chain of events begins with the creation of a separation or a potential energy difference brought about by the centrifugal action of Prakrti.

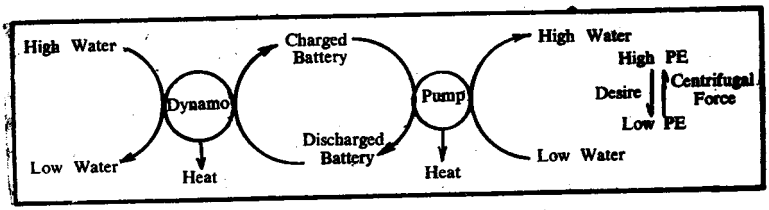

Fig. 10. Energy Transformation to Move Water

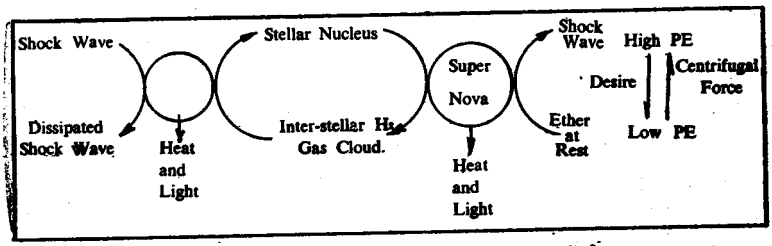

Fig. 11. Energy Transformation on a Cosmic Scale

Once a difference has been created, then desire takes over and the subsequent sequence of events unfolds spontaneously.

To summaries : all movement, all the complex physical and chemical changes, large and small, that we observe in the universe are ultimately motivated by the desire of matter to escape its bondage or confinement and to achieve liberation. In Brahmacakra philosophy this phenomenon is described as Negative Saincara or the spontaneous conversion of solid factor into the subtler four factors. In the physical sciences this phenomenon is observed as the conversion of matter into heat and photon radiation according to the equation $E=mc^2$, and the conversion of other forms of potential energy into heat according to the Law of Entropy. (Matter is also a form of potential energy). This conversion does not happen in a single step since potential energy is transformed from one type to another so generating long complex chains of energy conversion. Ultimately however, all energy conversions are motivated by the desire of matter to negate, neutralise and overcome differences and separations generated by the centrifugal action of Prakrti. The ultimate state desired by matter is that of equilibrium, uniformity, stability and randomness; that is potential energy.

It may seem strange that particle decay or radioactivity, the four forces of nature and the Law of Entropy have all been cited as examples of the desire in matter to escape bondage or confinement. For instance the force of gravitation which tends to contract a proto-stellar hydrogen gas cloud is opposed by the entropic tendency towards expansion. How then do they both manifest desire ? The point is that when Parkrti binds Consciousness, it generates more than one kind of disturbance, and therefore more than one kind of desire. As Saincara progresses, desires not only increase in strength but also in type. Gravitational attraction helps to release a distortion in the etherial standing wave, but at the expense of generating another distortion in the form of an orderly concentration of matter is one place. So matter is caught in a net of desires; if it pulls one way the noose tightens in another direction and so on. But in the process of pulling this way and that, matter escapes a little at a time in the form of radiation and heat or luminous and etherial factors.

A final note. Some forms of crude matter appear to be very

stable and do not appear to succumb to any dissipating tendency such as particle decay or entropy. For instance, the proton is exteremely stable. There are two factors operating in these cases. It is now thought that the proton does eventually decay into an electron, liquid factor and subtler particles but its half-life may be of the order of billions of years. That is, for all intents and purposes the proton is stable solid factor until it is viewed on a Cosmic time scale. Secondly, some ordered, improbable, low entropy substances require a shock before they break up. They must be supplied with a booster or activation energy before spontaneous disintegration. For example, dynamite is a chemically improbable substance but it will not explode without the use of a detonator. Similarly plutonium has a long half-life but it will explode with the right kind of detonation.

Frustration and the Speed of Light

According to the philosophy of Brahmacakra, the spontaneous tendency of matter to escape confinement and return to its original condition meets with an obstacle. Solid factor can disociate into the four subtler factors liquid, luminous, aerial and etherial—but can go no further than ether. It cannot disassociate into Citta particles, that is, mind. In the language of Brahmacakra, matter is a thought projection of the Cosmic Mind and the Cosmic Mind refuses to withdraw or reabsorb its thought projection, even a small part of it. So crude matter gets no further than etherial factor.

Is there any phenomenon in the physical sciences that might represent this obstacle? Yes—the limiting speed of light. No physical particle whether matter-particle or force-particle can travel faster than the speed of light. Any particle which attempts to do so acquires additional mass and thereby becomes increasingly bound.

We can understand this phenomenon intuitively as follows. If a particle could increase its speed without restriction, then theoretically speaking there would be nothing to stop it acquiring an infinite speed. But the only entity which has any infinite quality is unbound Consciousness. A speed restriction in effect

places a barrier around matter and prevents matter from retracing the path of Sanicara. This is necessarily an intuitive understanding because Unbound Consciousness has no properties, not even infinite properties, and not even the property of an absence of properties.

The speed of light is a boundary condition that separates matter from the subtler entities of mind and Consciousness. If physical particles could increase their speed indefinitely, at the expense of their mass or bound energy, then they might become Citta particles, which would constitute a withdrawal of the Cosmic Mind. In the Cosmic play of Brahmacakra, mind imposes a check on itself so preventing any matter particle from acquiring a speed of greater than 300,000 km/sec. Matter is thus frustrated in its attempt to escape bondage.

The physical universe is therefore trapped between two boundaries. At the subtle end, it is trapped by the limiting speed of light which prevents the conversion of etherial factor into mind. At the crude end, spontaneous Jadasphota prevents matter from being compressed beyond a certain point, which varies according to the structure concerned. If compressed beyond the limit, solid factor disintegrates and 'slips through the fingers' of Prakrti. Although trapped, the physical universe is not a completely closed system. There is some input and output. Input is by way of conversion of Cosmic Mind into ether, which is a transition of the upper or subtle boundary. Output is by way of conversion of inert matter into unit mind, so initiating the path of biological evolution. Biological evolution represents an alternative fate to Jadasphota and is the only route by which matter can return to a state of unbound Consciousness. More is mentioned about this in the chapter "The Origins of Life".

The Conservation Laws

The physical universe is a flow through system with input and output, rather than a closed system as believed by most Western cosmologists. But this does not necessarily mean that we live in a steady-state universe since input does not have to equal output all the time. It does mean however that the

thermal death of the universe will not occur. It also means that the time honoured law of physics, that mass/energy is always conserved, is now inadequate. Mass/energy is created out of the Cosmic Mind and is destroyed by conversion into the unit minds of living organisms. Since mind, energy and matter are interconvertible, is is more accurate to speak of the Law of Conservation of mass/energy/mind.

There are several other very important Conservation Laws in physics. For instance, electric charge is conserved, particle spin is conserved and particle number is conserved. In particle interactions involving neutrinos and electrons, physicists observe that the total number of particles, the net charge and net spin remains the same after the reaction as before. P. R. Sarkar appears to be alluding to the Conservation Laws in the following passage about Tanmatra intensity. "A very important point to be noted there is that the immanent capacity of an object, whether etherial or solid, for discharging Tanmatras, remains the same. Any increase in the number of sense perceptions does not affect the total intensity of perception. It remains constant in a mathematical manner." ("Idea and Ideology" p. 26).

Let us say the aerial standing wave of a galaxy carries a certain number of neutrinos (the number would be astronomical !). In the compression of parts of the aerial factor into luminous factor, no new Tanmatra particles would be formed. Rather neutrinos in the vicinity of the luminous standing wave would be converted into photons. This example is theoretical, but physicists believe that the dark matter particle referred to previously, the axion, would convert to a photon in a magnetic field.

The Law of Conservation of mass/energy/mind may also mean that when matter and mind are interconverted, etherial Tanmatras will give rise to the same number of Citta particles and vice-versa. That is, the conservation of particle number may extend beyond the realm of matter.

A Thought About the Future

Finally a thought about the future. An important consequence of the limiting speed of light is that human beings will

not be able to explore planets in deep space by transporting our physical bodies in physical rockets. The distances are too great for the speeds involved. It is of course dangerous for scientists to pronounce that certain physical obstacles will never be overcome. Air travel was once pronounced impossible. While science fiction writers have invented hyper-space as an imaginary device to by-pass the limiting speed of light, Eastern cosmologies provided the clue to interstellar travel long ago. The clue is that the human mind can move at speeds greater than that of light. It can travel at tremendous speeds although not instantaneously, since this would imply infinite speed. Mind is not Consciousness.

In one or two passages, P. R. Sarkar gives the hint that human beings will explore space by projecting their minds. Already astral travel is within the capacity of some human beings. As human mental and technological capacity increase, the travelling human mind may be able to stop on some distant planet and construct and operate simple tools, even robotic devices. In the meanwhile, the vacated human body would remain on earth, kept safely in hospital life support systems which will be the airports of the future. The human body is a mere mechanical device under the control of the mind.

MIND OVER MATTER

In this chapter we are concerned with the relationship between mind and matter. The topic falls into two parts; first we shall examine the relationship between matter and the mind of the observer/experimenter; and secondly, we shall examine the relationship between matter and the Cosmic Mind.

Matter and the Eye of the Beholder

In physics, as in all the physical sciences, the basic method of acquiring information is through the senses. The raw sensory data must then be processed, the end result being a hypothesis or theory or scientific law. This process is entirely a mental activity. Until recently the mental processing step was pretty much common sense. For example Boyle's Law that the pressure of a given quantity of gas is inversely proportional to its volume—is a common sense conclusion from experiments with gases. However recent developments in physics have forced scientists to use their minds in ways which depart from commonsense. If any scientific sense is to be made of the raw sensory data, then the processing mind must be deployed in 'nonsensical' ways.

As an example, let us examine a particular facet of Einstein's Theory of Relativity and ask the question—is the universe finite or infinite? Back in the days of commonsense physics, Newton and his German contemporary Leibniz, both asked themselves this question. Newton believed that the universe consisted of a bounded, finite number of stars (today we would say galaxies) occupying a finite part of space. Thus, according to this view, the universe would have an edge and a centre. Leibniz on the other hand, believed there was an infinite number of stars spread homogenously throught infinite space. To him a finite universe was unacceptable because God would have had no reason to put it in one place rather than another. Newton could not accept an infinite homogenous uni-

verse because he believed God to be the only Infinite Entity. These two models of the universe are clearly different, yet each contains aspects which modern astronomers regard as correct.

According to the modern view, our universe is actually the remnant of an initial tremendous explosion—the so called Big Bang. As a model to describe this universe, scientists compare the galaxies to spots on an expanding balloon. As the balloon gets larger the spots move further away from one another. Likewise, the galaxies are receding from one another as the universe expands. But does this mean that modern astronomers have opted for the finite non-homogenous view of Newton? No, it's not that simple! If the balloon model is correct, then we would see different numbers of galaxies depending on which direction we looked out into space. Leibniz's intuition and modern observation tell us that in fact there are equal numbers of galaxies no matter which direction we look into space and no matter where we are in the universe. That is, the universe does not have an outside edge—every galaxy is surrounded by other galaxies on all sides.

So the problem remains as it has for centuries—how to picture a universe with a finite number of galaxies but with no edge or centre. Raw sensory data tells us one thing but our 'common sense' data processing mind tells us the data is impossible. This is the problem which Einstein solved so brilliantly.

The common feature of the previous three models of the universe—Newton's, Leibniz's and the expanding balloon model—is that they each assume that galaxies which make up the universe are suspended in an infinite three dimensional space. They each assume that space extends up-down, left-right, forwards-backwards an infinite number of measureable kilometers. Such a space we may call a flat geometry space. It is our common sense understanding of space, which we use all the time. But on the Cosmic scale it turns out to have nothing to do with reality.

Since it is not possible for the universe to be both finite and homogenous having no centre and no edge in a flat geometry space, Einstein decided that in fact space did not have a flat geometry. Space, he said, on a Cosmic scale is curved and irregular. In places it is expanded, and contracted in others. Of course it is not possible to picture such a universe;

it is not commonsense, yet it is the only way to reconcile a finite wavelength with a homogenous universe. It is possible to make simple ball and stick models of the Newtonian and Leibniz conceptions of the universe. It is not possible to make a simple ball and stick model of Einstein's universe unless we bend and distort the sticks and then declare that they are straight, as in Figure 12.

It is possible to arrive at an intuitive understanding of the curvature of space by a simple example. Returning to the balloon model, we can imagine the balloon to be extremely large with black spots, representing galaxies, equally distributed over its surface. To a small ant standing on the balloon's

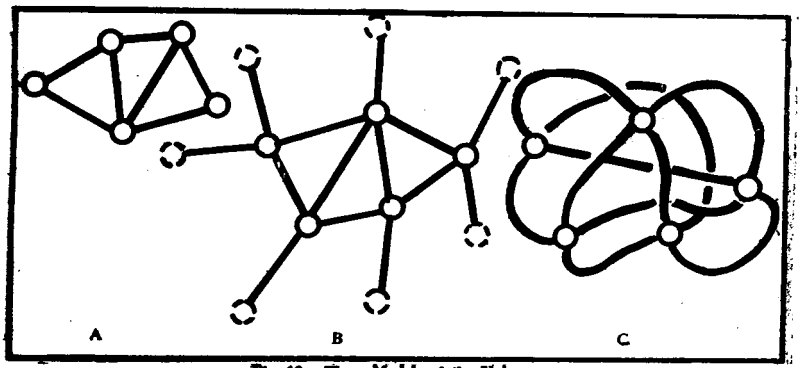

Fig. 12. Three Models of the Universe

In these three ball and stick models of the universe, the balls represent galaxies and the sticks represent the shortest distance between adjacent galaxies. Five galaxies only are represented but the principles remain the same for billions of galaxies.

A Newton's universe with a finite number of galaxies. The galaxies have a centre and an edge but they are suspended in infinite space.

B Leibniz's universe with a homogenous distribution of an infinite number of galaxies in infinite space. This universe has no edge and no centre. It looks the same in all directions no matter where an observer is situated.

C Einstein's universe solves the paradox of a finite homogenous distribution of galaxies by doing away with flat 3D space. In this very diagrammatic representation each galaxy is surrounded on all sides by other galaxies. Each stick represents the shortest distance between adjacent galaxies. The sticks are straight; it is space that is curved. Not only is there a finite number of galaxies but space/time is also finite.

surface, its surroundings are flat. The ant could conceivably count all the spots and discover them to be finite Yet no matter where it stood on the balloon, the ant would always be surrounded by equal numbers of spots on all sides. We assume here that the ant can only see in its two dimensional plane. The ant's universe then, consists of a finite number of homogenously distributed black spots. Confined by its two dimensional vision, the ant cannot visualise the truth of its universe in 3D. We can apply this example to our universe of galaxies, but add a dimension. Humans are confined by their 3D vission and cannot see the real universe which is four dimensional. The fourth dimension is not time. Rather each of the four dimensions is a fusion of space and time. In some way which defies commonense, our apparently flat 3D universe is curved in four dimensions of space/time.

When a cartographer attempts to make a map of the world, we all know that shapes of the countries are distorted, particularly near the poles, because it is impossible to translate a curved surface accurately onto a flat surface map. All large maps are just workable approximations. Likewise any three dimensional ball and stick model of the universe will be just an approximation because the universe is in a curved geometry space. Just as city street maps are useful because they portray a very small, virtually flat, portion of the earth's surface, so too our flat three dimensional conception of space works only because we are usually dealing with a small, localised part of it. On the Cosmic scale, our common sense fails us as do our cosmological maps.

As we have already noted, the explanation for the curvature of space is matter. Matter distorts the space/time about it and is itself a condensation of space/time. The stars and galaxies are not just dead weights suspended in space. Stars mould the shape of space/time and space/time in turn determines the movement and interaction of the stars. There is a dynamic interaction between matter and space/time. It is not only matter which is finite. Space/time is also finite but expanding with the galaxies. So quantities of length and time are not absolute; they are quantities which arise out of the motivity of matter. To ask what is outside of our physical universe is to ask an impossible question because then we are outside of space

and time. The limitations of language take over if nothing else.

Einstein's Theory of Relativity and the 'New Physics' tell us that physical matter is not constrained by our common sense conception of it. The fundamental technique of all the physical sciences is sensory observation and mental processing. Part of mental processing is to measure the size of that which is sensed. We measure space, mass and time and put numbers onto them. Common sense seems to permit this. But today we have discovered that the numbers are rubbery. Length, time and mass depend not just on when and where they are measured but even on who measures them. The more physicists dissect matter, the more it appears as if the notions of length, time and mass are not intrinsic properties of matter but projections of the human mind trying to extract some order out of chaos. Some insight into this phenomenon can be had from reading "Physics as Metaphor" by physicist Dr. R. Jones.

Jones asks: "What is it that makes two line segments differ by length? Can the points be said to take up more space in one case than in the other? (In measurement, a line is said to be made up of an infinite number of points.) What is it that makes lines, surfaces, and space regions have different lengths, areas and volumes in the first place? Here is a great mystery which has no answer. Probably it hints once again at the illusory nature of our space metaphor with its fixation on the notion of extended space. If space and its extension are imaginative projections of the mind, then stretching and shrinking them shouldn't seem so impossible. Size itself, measure, and number are mere appearance and metaphor, and they should not be mistaken for some ultimate invariant—they should not be idolized." (p. 227, "Physics as Metaphor" Abacus 1983).

Jones believes that not only scientific method but the very simple act of measuring is a creation of the human mind. Matter has never acquiesced to the process—it is not inherently fixed or numberable. Rather humans were motivated, says Jones, to number and measure out of a fear of chaos. We may have quelled our fear in part but at the price of beauty and truth. By objectifying matter, we have lost a portion of the mystery and meaning of creation; by casting ourselves in the role of observer, we have forgotten our part in the creation.

While bearing in mind that physicists are only now arriv-

ing at these subtle notions, we can note that Buddha, living more than 2000 years ago, taught that time and physical space are nothing but "names, forms of thought, words of common usage, merely superficial realities". The first century Buddhist, Ashvaghosha exclaimed: "Be it clearly understood that space is nothing but a mode of particularisation and that it has no real existence of its own.....Space exists only in relation to our particularising consciousness." Eastern cosmology arrived at this understanding through the mental disciplines of Intuitional Science.

It is interesting to speculate whether the human mind will ever be able to visualise the four dimensional universe. In the course of their evolution, human beings, indeed living beings, have never had to cope in any practical way with the macro phenomena of four dimensions or the micro phenomena of radom, uncertain sub-atomic events. Life has evolved in the middle ground. What if these macro and micro phenomena had impinged on the evolving human consciousness. We believed the world was flat until our experience proved otherwise. We made the adjustment from 2D to 3D. Can we make the adjustment to 4D ? Scientists who dwell on these problems say that they do eventually arrived at intuitive but illuminating and convincing visualisations. It is partly a problem of conditioning. It would appear as if humans will have to learn to adopt different states of consciousness depending on the subject to be understood or the task at hand. One unchanging consciousness is no longer good enough.

Tanmatras and Perception

In chapter one Tanmatras were described as partly wave, partly particle. They are responsible for the sensory properties of matter. Whether they show themselves in the guise of wave or particle depends on the manner in which they are observed. The particle nature of Tanmatras is nothing concrete. Particles such as the electron or photon have no detectable dimensions—they behave as points in space. Furthermore physicists have discovered that these particles have no independent existence; they are created through the act of observation. We

also learned in the previous section that the process by which we measure and number matter is more a product of the human mind than intrinsic to matter itself. Certainly the physical world is beginning to take on an ephemeral, even illusory character.

It is now obvious that any body of knowledge about the physical world cannot be taken in isolation and must be incorporated within a larger process which includes human perception and the human mind. Eastern philosophy gives us the tools and a model with which to achieve this. According to Eastern philosophy, and Brahmacakra in particular, human beings are able to both receive and emit Tanmatras. Incoming Tanmatras are picked up by the sense organs where their momentum is translated into afferent nerve impulse. These impulses excite the brain which in turn generates a disturbance within the mind. Mind is something different from the brain and the latter may be thought of as an interface between the physical body and the mind. Conversely, the mind is able to cause the body to emit Tanmatras. The process begins as an agitation in the mind, which activates the brain to send impulses down the efferent nerves which stimulate muscles or glandular secretions. Eastern philosophy understands this muscular action and the momentum it generates in the external world as a Tanmatra.

There are five sensory organs to receive afferent Tanmatras and five motor organs to emit efferent Tanmatras. Both types of Tanmatras should be thought of as a vibrational energy form which can be converted into other forms of energy. A table of the sensory organs and their functions is given below is Figure 13.

It is not easy to mesh the Brahmacakra concept of Tanmatras with the Western science of human physiology. Physiology is still an undeveloped science that has not moved beyond crude, mechanistic, chemical models. However this problem does not affect the discussion at hand.

Afferent and efferent flows of Tanmatras are linked in a purposeful manner. The process of perception begins with a desire held in a person's mind. Let us say that the person is in an empty room and a desire arises to discover what is behind the closed door opposite. The curious and perhaps anxious

mind stirs the brain which stimulates the leg muscles to walk. Next the hand muscles open the door. The mind has now manoeuvred the sensory organs into a position where they can intercept the desired sensory Tanmatras. Let us say the room contains a table and flowers. The form Tanmatras of the table and flowers are received by the sense organs and eventually arrive at the mind. The mental desire which initiated the cycle is now neutralised.

In the last chapter we equated desire with potential energy. It arises where Prakrti creates a difference or separation. In Eastern philosophy mental desires are known as Samskaras. They may be thought of as distortions within the mind or Citta standing wave, in the same way that a gravitational field is a distortion of the etherial standing wave. Just as matter has an innate tendency to escape confinement, so too the human mind has an innate tendency to neutralise any disturbance within it. The mind therefore emits Tanmatras in such a way as to receive sensory Tanmatras that neutralise its Samskaras. Samskaras are the seeds of action; they are a form of potential energy. They are the desires which govern what the sense organs perceive. The cyclical process of human perception is outline in Figure 14.

In Brahmacakra philosophy there are five necessary conditions for perception. Firstly, the sensory organs should be in a

BHUTA	CORRESPONDING TANMATRA	SENSORY ORGAN	FUNCTION
Etherial	Sound	Ears	Hear
Aerial	Touch	Skin	Touch
Luminous	Sight	Eyes	See
Liquid	Taste	Tongue	Taste
Solid	Smell	Nose	Smell

Fig. 13. Table of Tanmatras and Sensory Organs

healthy, functional condition. Secondly, objective conditions should be ideal; for example for someone to see properly there must be adequate light. Thirdly, the mind must be concentrated on the object of perception; if the mind wanders it will not register and interpret the information received from the sensory organs. Fourthly, the nature, form and field of perception will vary according to time, place and person, hence perception is only possible within the limits of relativity. Finally, there must be proper co-ordination between the Tanmatras, the Pranendriya or energy, the sensory organs, the motor organs, the unit mind and unit consciousness.

The cyclical model of action and perception is perhaps strange to the Western mind, but at least it does not defy commonsense. But when we apply it to sub-atomic physics, commonsense once again is called into question. Scientific experiments are cyclical procedures that begin with a desire to unlock one of the secrets of nature. In an experiment to explore the atom, a scientist sets up the apparatus in an appropriate

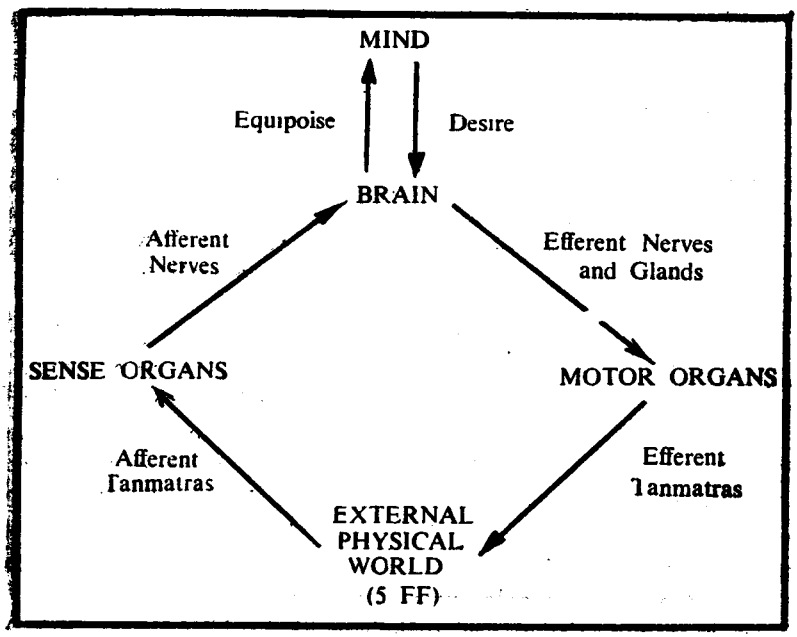

Fig. 14. The Cyclical Process of Human Perception

way and fires a photon at an atomic target. If an electron is ejected, it is picked up by instruments. By reading the dials, the scientist is satisfied that an electron was or was not produced. In the first part of the cycle there is the ejection of Tanmatras from the scientist in setting up the apparatus and pressing the buttons at the right time. This culminates in the collision of the photon and the atom. The second part of the cycle involves the flow of afferent Tanmatras; the electron interacts with instruments, which send information on light photons to the scientist's eye, nerves, brain and finally mind.

But remember that the electron had no existence as such prior to the collision between the photon and the atom. It is a creation, if it is created at all, of the experimental process. It is a link in a chain of events that begins and ends with the human mind and cannot be disentangled from those events. Where an electron is created in the act of observation, it is pointless to define it in independent and absolute terms. Ultimately its properties are linked with the desires and sensory psychology of the scientist concerned. Just because numerous scientists can repeat the same experiment does not endow the electron with objectivity—it just says something about the human mind or about scientists' minds.

What if the cycle remained incomplete? Suppose a scientist set up the apparatus, pushed the buttons but never returned to look at the dials or the chart recordings. There are two possibilities; either the experimental procedure succeeded in producing an electron, or it failed to do so. The scientist can calculate exactly the probability of producing an electron but cannot know actually what happened until they look at the dials, so completing the cycle. According to Quantum physics, the initiation of an experiment produces an unfolding series of possible results; but as soon as a perception is made something dramatic happens; all of the possible outcomes collapse except the one observed. That is, the act of observation creates or destroys the particles possible existence. Before the act of observation we can say nothing about the electron except the probability of its existence.

In the common sense world, objects appear to exist quite independently of the observing human mind. The human mind may manipulate matter in order to enjoy it but does not create

it. Quantum physics tells us that we create matter in the process of observation, or to put it more accurately, observation crystallises a multitude of unfolding possibilities into a single actuality.

Says Roger Jones, by insisting on attributing some objective truth to matter, "we fail to sense and experience our own act of participation in nature. Modern physics screams at us that there is no ultimate material reality and that whatever it is we are describing, the human mind cannot be parted from it. And yet we turn deaf ears to this profound cry."

Jones goes to acknowledge that these ideas are so novel and so difficult that physics has not discovered how to modify or enlarge itself to assimilate the mind. One problem is that it seems just too absurd to claim that the stars and galaxies only have certain existence because we humans observe a miniscule portion of the star light coming from them. Obviously there is an intimate link between mind and matter but the human mind is surely too puny to substantiate all the material events in the universe. These are the philosophical problems that Quantum physics has raised. Physics alone is probably inadequate to solve them, but they are precisely the kind of problems that come within the jurisdiction of Intuitional Science.

Brahmacakra philosophy agrees that material objects are substantiated only through witnesship or observation. To put it crudely, an object which ceases to be witnessed, ceases to exist. But witnesship is not a capacity confined to human beings; the Cosmic Mind also witnesses the universe and Cosmic Consciousness witnesses the Cosmic Mind. Consciousness is the ultimate witness and substantiates the universe. This brings us to the relationship between matter and the Cosmic Mind.

Has Physics Discovered the Cosmic Mind ?

The cycle of creation begins with Consciousness. During the first half of the cycle or Saincara, Consciousness is bound by Prakrti to become Cosmic Mind. Cosmic Mind is further bound to become matter. Mind and matter are both vibrational or wave phenomena. Where two waves intersect, Tanmatras appear which have sensory properties. The interaction of ocean waves was offered as a model in the first chapter to visualise the

relationship between Consciousness, Cosmic Mind and matter. The diagram of the water skier in Figure 15 is another intuitive aid. The straight lines represent Consciousness, the wavy lines represent the Cosmic Mind and the thick lines represent matter. This diagram suggests that the material universe exists within the Cosmic Mind. There may even be numerous material universes existing within the Cosmic Mind.

When describing the Cosmic Mind we are once again confronted with problems of language. On the one hand we say that the Cosmic Mind is some form of vibrational entity, which implies movement in time and space, and yet on the other hand we say that it is pointless to talk about time and space outside of matter. We can by-pass this paradox by remembering that it is only the conceptions of space and time as fixed, linear, measurable quantities that may not be applied to the mind.

Space and time as qualities apply to the mind as they apply to dreams. Dream time is rubbery—it speeds up, slows down, jumps from past to future and future to past. Dream space is rubbery—it expands in places and contracts in others quite effortlessly as per desire. Perhaps one day scientists may discover ways to describe the crudest levels of the mind using a subtle form of meta-mathematics. In the meantime, the Cosmic Mind is known to us only through the Intuitional Sciences.

According to Brahmacakra, matter, mind and Conscious-

Fig. 15. Representation of the Universe Existing within the Cosmic Mind and Cosmic Consciousness

ness are intimately linked. Matter is not a precipitate from a solution of Consciousness, which once formed, leads an independent existence thrashing blindly within the confines of Jadasphota and the speed of light. Rather all material processes, even the slightest puff of wind, even the flutter of a blade of grass, come within the purview or guidance of the Cosmic Mind. In one passage, P. R. Sarkar says that no one physical event is more significant than another. The movement of an ant is as significant to the Cosmic Mind as the movement of an atomic bomb.

And behind all, is the Witnessing Entity, Cosmic Consciousness. "So whatever is being done in the universe is nothing but a mental creation of the Supreme Consciousness; everything is within Its mind. It is the Macrocosm and everything is microcosm. Each and every person is moving within Its Mind. Everything is within It, nothing is without. So whatever is being done, It sees, It knows, It feels. This universe is nothing but a mental projection of that Supreme Consciousness." (P. R. Sarkar, "The Thoughts of P. R. Sarkar" p. 9). Another visual analogy may be useful here. Matter is like a puppet. It believes that it is controlled by strings (the Cosmic Mind) but the strings know they are controlled by the puppetteer (Consciousness). The audience, who cannot even see the strings, are fooled into believing that the puppet derives its motivity from within. Physicists, like the audience, have been fooled into believing for so long that matter is its own source of motivity.

If matter is under the control of Cosmic Mind, then we would expect to find some evidence for the latter's existence. The audience may not be able to see the strings controlling the puppet, but careful observation and reasoning should eventually lead it to conclude that invisible strings are at work. Likewise physicists might expect to find apparently non-material causes for material events. Such events might even appear to be acausal.

Before discussing the evidence for Cosmic Mind, we need to recall the concepts of entropy and neg-entropy. Entropy is a measure of randomness within a system and it has a spontaneous tendency to increase with time. Neg-entropy is the force which must be applied to a system to oppose entropy, to increase

orderliness and structure. Imagine once again the two flasks joined by a stop-cock in Figure 9, chapter two. This time the mixture of nitrogen and chlorine gas fills each flask and the stop-cock is open. In order to separate the gases a force of neg-entropy would have to be applied, perhaps some form of chemical separation or centrifugation. But let us try the following thought experiment. Suppose we could diminish in size and sit beside the stop-cock which has now become frictionless; that is, it requires no work to open and close the stop-cock. When we saw a nitrogen molecule coming from the right flask, we could open the stop stop-cock and let it pass through. Likewise we could open the stop-cock to let chlorine molecules pass into the right flask. We would keep the stop-cock closed when we observed a molecule approaching from the wrong direction. Clearly after some time the gases would be separated; nitrogen in the left flask and chlorine in the right flask. Entropy would have been opposed but without the expenditure of any work, since the stop-cock was frictionless. This thought experiment puzzled physicists for a time because it was thought to defy the Law of Entropy. The person operating the stop-cock became known as Maxwell's Demon after its inventor.

The solution to this paradox came from a curious quarter. In order to separate the gases, Maxwell's Demon had to be able to recognise the difference between a chlorine molecule and a nitrogen molecule, and the difference between the left side and the right side. That is, the demon had to be programmed with information. Today scientists recognise clearly that information is a form of neg-entropy. A robot can build a car from disordered pieces because its computers are programmed with information. A young animal grows and becomes more complex because it contains information in the form of genes. The important point here is that inormation is stored intelligence. Wherever we see unexplained increases in order, structure and complexity, we can suspect the operation of an intellect.

The ability of the vacuum state to manifest virtual particles has already been mentioned. It is clear that this involves an increase in order and that the force of neg-entropy is at work. The phenomenon is highly significant because there no known physical mechanism for it to occur. It appears to occur

spontaneously and by chance. Some force outside of the usual material universe is at work.

It turns out that a large number of sub-atomic quantum processes appear to require a source of neg-entropy arising from outside of the processes themselves. These quantum processes have two important characteristics. Firstly, the force of neg-entropy is a kind of information or intelligence; and secondly, the information is transferred from one part of an experiment to another at super-luminal speeds; that is, many times faster than rhe speed of light, but not instaneously.

Super-luminal speed and intellect are both qualities of mind, which matter does not display. From the point of view of Eastern cosmology, the creation of virtual particles is at least good evidence for the intervention of Cosmic Mind in the physical sphere.

But we can add more. The force particles which mediate the four forces of nature are virtual particles. In effect they are created out of nothing. Gravitons and photons are the particle manifestations of gravitational and electro-magnetic force fields respectively. Force fields in turn determine the motivity of matter. For example, the attractive and repulsive modes of electromagnetic force fields determine the behaviour of gases and the course of chemical reactions.

In chapter two we identified force fields as Prana and the virtual particles as Pranic particles. What Tanmatras are to the 5FF, Pranic particles are to the force fields. That is, Pranic particles such as gravitons and photons have no independent existence; they are artifacts of our attempt to observe force fields. According to Brahmacakra, Prana is the link between mind and matter. Piecing these ideas together, we now have a model to describe at least one mode of interaction between the Cosmic Mind and matter. The interaction may be described either from the point of view of particles or fields. From the particle point of view, the Cosmic Mind creates and destroys vitual (force or Pranic) particles, and these in turn determine the interactions between matter particles. From the field point of view, the Cosmic Mind creates and destroys distortions within the standing waves of the 5FF and these distortions in turn determine the play of the 5FF. To the physicist, the creation and destruction of virtual particles are random, statistical events. They are

apparently acausal. But from the point of view of Intuitional Science, these events are purposeful and caused. At the quantum level the chain of cause and effect can no longer be kept within the confines of matter. Mind is finally exposed, although the facade of statistics still remains to confuse the skeptics!

The Meaning of Quantum Physics

At the present time, the great majority of physicists are reluctant to acknowledge and even scorn the notion of mind as a participant in quantum events. They prefer to hide behind the facade of statistics. On the other hand 'new age thinkers' have been too eager to rush into territory which is unfamiliar to them. No doubt this author could be accused of the same! Physicists themselves are unsure of the meaning of Quantum physics.

Quantum physics paints an uncertain picture of reality. Atoms are the basic building blocks of our everyday material world. The dominant feature of an atom is its electron cloud or clouds. The colours, shapes, textures etc. of all the familiar objects around us are ultimately determined by the shapes and sizes of the atomic electron clouds. Yet if we ask what is the electron cloud in reality, we can produce no more than an abstract mathematical equation, known as a Shrodinger Wave Function. The electron cloud can only be visualised as a probability field. To any point in the field we can ascribe a number which is the percentage probability of finding an electron at that point at a particular time, should we try to look for one. Obviously a probability is not a thing and yet there is absolutely nothing else physics can say about an electron cloud.

The wave function is incapable of telling us precisely what will happen when next we look for an electron in the atom. The only way to find out is to look. Prior to looking the only thing that could be said to exist is a probability. And for as long as the physicist leaves the atom alone, all that exists is a probability field propagating through space/time. There is a possibility that the electron could be found at any point within the electron cloud, but when the physicist probes the atom suddenly everything is changed. The wave function/probability field/electron cloud collapses completely because the electron,

when it is found, is found at one point only. The probability of finding the electron anywhere else drops to zero. But the collapse of the electron cloud and the creation of the electron matter particle were initiated only by the act of observation. Hence physicists ask what was there before observation, and does observation create the electron? Quantum physics presents the commonsense mind of the physicist with five dilemmas. Firstly, sub-atomic events appear to be inherently random and macroevents, which are a summation of numeroust sub-atomic events, must also in the final analysis be fundamentally random. This is the Dilemma of Non-causality. Secondly, any attempt to look at or measure matter involves an interaction between the observer and the observed. Hence matter cannot be described or measured apart from the observer. This is the Dilemma of the Unity of Matter and Consciousness. Thirdly, in consequence of the second dilemma, it is not possible to describe matter as it is in reality between observations. To attempt to do so generates contradictions. This is the Dilemma of Non-realism. Fourthly, certain quantum events such as the collapse of the wave function propagate faster than the speed of light and therefort defy the usual conceptions of space/time. This is the Dilemma of Non-locality. Fifthly, perhaps this is the most perplexing dilemma of all. Quantum mechanics is the most successful theory ever produced by science. It describes everything we can know about matter despite all the above dilemmas. This is the Dilemma of 'it can't be true but it works'.

There are several interpretations of Quantum physics each of which attempts to resolve the above dilemmas in a different way. We will examine only four of the more important interpretations. For a more complete account read "The Dancing Wu-Li Masters" and "Eye to Eye".

The Copenhagen Interpretation: In the autumn of 1927, physicists met in Belgium to come to some agreement about what the new physics meant. What they agreed upon is known as the Copenhagen Interpretation and is still the accepted view of the great majority of physicists today. Essentially they took a pragmatic view and said it does not matter what Quantum mechanics means, the important thing is that it works in all possible situations. The collapse of the wave function is purely random and we do not need to look any deeper than that. The

Shrodinger Wave Function is all we can possibly know about matter and it is all we need to know. There is no need to look behind the scenes as it were, to find a deeper reality.

The Copenhagen Interpretation was a significant event in the history of science. Beforehand, scientists had always believed they were discovering truth—that their laws and theories were true reflections of reality. Now they were admitting for the first time that reality remains unknonw and that scientific laws are just fabrications of the human mind which we accept as truth because they yield desirable results. This was a positive step forward in the subtlety of Western science.

However the Copenhagen Interpretation also has a negative aspect in that it hides behind statistics. It says that at the most fundamental level the events in our universe are purely random. There is nothing more to existence than chance. The appearance of our universe at the Big Bang, says Quantum physics, was nothing but a chance event, a random fluctuation in energy that spilled over into the appearance of matter. The universe has no more significance than the expression of chance. The appearance of life on earth, even human life, is nothing more than the outcome of chance events; it has no more significance or meaning beyond that.

Ultimately the Copenhagen Interpretation is an avoidance of an explanation of quantum phenomena because it refuses to look beyond the methods of physics. It assumes that there is no way of understanding or approaching physical events other than through physical experimentation. The Copenhagen Interpretation is dissatisfying to the inquiring aspirations of the human mind because it says there is nothing more you can know about matter other than what Quantum physics offers.

Einstein could not accept this. God, he said, does not play at dice. Einstein meticulously tried to prove that Quantum mechanics was a deficient theory in one respect or another but he was defeated in every attempt.

The Multiple Universes Interpretation: According to the Copenhagen Interpretation, when a dice roles along the gambling table, the wave function for the dice expresses six probabilities, one for each number on the dice. When the dice finally comes to a halt, the wave function collapses as only one event occurs. But in the Multiple Universe Interpretation, the moment

the dice comes to rest, the universe splits into six branches, each expressing a different outcome of the wave function. In other words, the act of observation does not cause the collapse of the wave function. Rather the observer, being confined to one universe, gets to see only one of the six outcomes all of which occur. In a million ticket lottery, the universe splits into a million branches at the moment of the draw. In each branch a different person wins first prize. What a stroke of luck!

Says the Multiple Universes Interpretation, everything that could possibly occur, does occur—but in different universes. This explanation of Quantum physics defies all understanding. It is so extraordinary as to make the proposition of a Cosmic Mind seem quite ordinary. The interpretation is interesting only in that it gives us an insight into the intellectual somersaults that physicists will perform in order to prevent intelligence and meaning intrude into their universe. If every event happens that could possibly happen then nothing has any meaning; no intelligent force is at work selecting, directing and guiding. The universe is a mindless unfolding of every possibiliy. Furthermore, the observer or witnessing entity of any event becomes entirely superfluous, not to speak of a Cosmic Consciousness. The Multiple Universes Interpretation is a ploy by which physicists can avoid recognizing the Intelligence and Consciousness within the universe which they study.

The Implicit Order: According to this interpretation there is something going on behind the scenes of quantum events. Apparently random events at the quantum level are not actually random but played out on a hidden structure known as the Implicit Order. The notion of an Implicit Order was introduced in the first chapter to distinguish the 5FF or implicit order from the Tanmatra particles or explicit order. Implicit order is a relative concept, implying a hierarchical structure. If any level in the hierarchy is taken to be the explicit order, then the next higher level which encompasses and determines the lower level is referred to as the implicit order for that level. For example, aerial standing wave is the implicit order for all the luminous standing waves, but aerial standing waves have their own implicit order in the form of etherial standing waves.

What is the implicit order for quantum events such as the collapse of the wave function? Advocates of this interpretation

say that although the implicit order cannot be seen, quite a lot can be deduced about it from a careful study of quantum events. Recalling the analogy of the string puppet, this interpretation says that although we cannot see the strings we know they must be there and we can find out a lot about them by studying the motions of the puppet.

Now one feature of the collapse of a wave function is that it is almost instantaneous. When a building collapses, a wave of pressure passes through the bricks at a finite speed. Einstein said that the speed of collapse could never exceed the speed of light, regardless of the structure. But when a wave function collapses, every part of it collapses at the same time. It is as if the collapse is coordinated from behind the scenes by an instantaneous form of communication. Einstein would have said this to be impossible but the logic and experience of Quantum Mechanics appears to demand it.

So now we know something about the implicit order for quantum events. Information (neg-entropy) passes through it at super-luminal speeds. Advocates of the Implicit Order Interpretation are not prepared to say any more than this. Our understanding of Quantum mechanics, they say, does not permit it. As for the notion that the human act of observation creates matter, Implicit Order theorists point to the many events which occur in the absence of observation. Says physicist Bohm, "Indeed this (notion) is often carried to such an extreme that it appears as if nothing ever happens without the observer. However we know of many physical processes, even at the level of quantum phenomena, that do occur without any direct intervention of the observer. Take for example the processes that go on in a distant star. These appear to follow the known laws of physics and the processes occur, and have occurred, without any significant intervention on our part." (as quoted by Ken Wilbur "Eye to Eye" Anchor Press 1983 p. 145).

The Mind/Matter Interpretation: A small number of physicists accept the idea of a mind/matter connection. It is mind they say, which collapses the wave function; mind is the reality behind the scenes. Says physicist Jack Sarfatti, "In my opinion, the quantum principle involves mind in an essential way.....mind creates matter." (as quoted by Ken Wilbur "Eye to Eye" p. 143). But it should be noted that the mind Sarfatti

talks about is the unit mind of individual people. This limited interpretation of mind poses some problems, as we have already seen.

Unfortunately some other physcists and new age thinkers have made extravagant claims casting the mind/matter interpretation into disrepute. For example it is claimed that the Tao, the Buddha, Unbound Consciousness Itself determined quantum events directly and collapses the wave function. "It is Consciousness itself that collapses the state vector", says physicist Boynam. (Quoted by Ken Wilbur as above p. 143).

The problem with posing a direct link between God and quantum events is that if physicists do find some technological entry into the implicit order and do discover what is going on behind the scenes in scientific terms, then physicists will once again have been cast in the role of disproving the existence of God ! But physics has no such capacity. Mystics know and have always known that Consciousness exists and there is nothing that physicists can do or discover to make it otherwise. Besides mystics also know that Unbound Consciousness is far too subtle and elusive to be approached in a physics experiment.

The matter/mind interpretation must therefore be phrased in careful terms and the limitations of physical science must not be ignored.

The properties of the implicit order for quantum events so far discovered by physicists are similar to certain properties of mind as described by Intuitional Science. It is therefore reasonable to hypothesise that the implicit order behind quantum events such as virtual particle creation and wave function collapse, is mind. Most frequently the implicit order is Cosmic Mind. Human mind also has the same capacity but its jurisdiction is necessarily limited.

The Anatomy of the Cosmic Mind

In the beginning there is Cosmic Consciousness. Yet there is no beginning because Consciousness has no dimensions of space or time. It has no inside or outside, it has no properties. It has no structure (that is, Its wavelength is infinite). In some abstract sense it has infinite dimensions which is drawn

diagramatically in some books as a random array of lines as in Figure 16.

In the initial stage of creation, the infinite dimension of Cosmic Consciousness orders itselves into a vast matrix of triangular forces. We can imagine this increase in order or decrease in entropy as generating the tremendous force required to initiate the first vibration in Consciousness. Cosmic Consciousness under the influence of Prakrti or the Cosmic Operative Principle, gets metamorphosised into stages of ideation. The initial stage creates the feeling of existence and the next stage creates the feeling of doership. These two stages combined form the subjective Cosmic Mind. Under the further bondage of Prakrti, the subjective Cosmic Mind is transformed into the Objective Cosmic Mind, and the feeling of 'done 1-ness' is created. The two stages of the Subjective Cosmic Mind and the Objective Cosmic Mind form the Cosmic Mind. The Cosmic Mind is finite because only a localised part of Cosmic Consciousness vibrates to form it. However, the scope of the Cosmic Mind is infinite because there is no end to the play of creation. The effect of vibration is to curve the dimensions of Consciousness in on themselves—that is, the Cosmic Mind is a closed standing wave of immense but nevertheless finite proportions.

The fundamental difference between Cosmic Consciousness and Prakrti is that the former is the Cosmic Cognitive Principle and the latter is the Cosmic Operative Principle. That is, Consciousness is continuous and non-attributional, while Prakrti is attributional.

As the compressing effect of Prakrti increases, the curvature of the dimensions of Consciousness also increases; that is, the

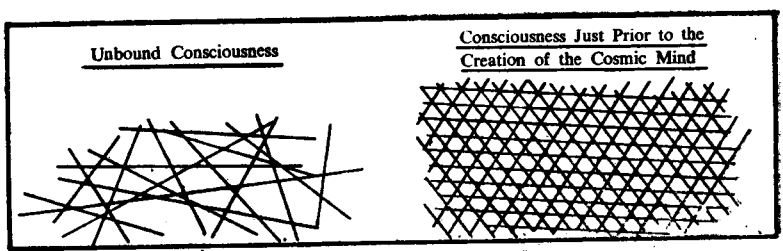

Fig. 16. The Ordering of Consciousness

wavelength decreases. Cruder or shorter vibrations appear nested within the subtler vibrations, giving rise to a hierarchy of forms. According to Eastern cosmology, the entirety of existence can be visualised as seven levels or Lokas, nested one within the other, not including Unbound Consciousness. The largest realm is Unbound Consciousness Itself which should not be thought of as having any dimension or limitation. The smallest and crudest realm is the physical universe. As we have seen, the universe is further divided into five layers which are the Five Fundamental Factors. Of the seven Lokas, the last two include the physical universe, and together with levels two to five, comprise the Objective Cosmic Mind. Level one or Satyaloka includes the Subjective Cosmic Mind. The characteristics and functions of the seven Lokas are explained below.

It must be remembered that the physical universe is also a mental projection of the Cosmic Mind and should therefore be thought of as the crudest level of Cosmic Mind. The physical universe appears as an objective reality to the unit mind but it is internal to the Cosmic Mind. The Five Fundamental Factors are standing waves known to us only as abstract mathematical wave functions. These wave functions are the implicit order behind the manifest world of Tanmatras or particle physics.

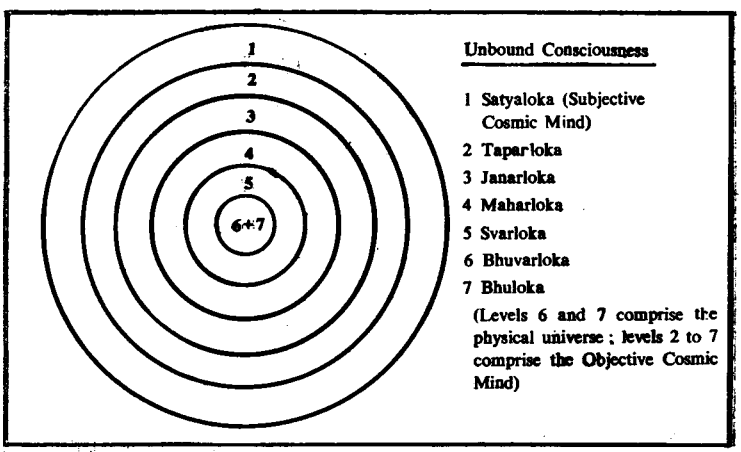

Fig. 17. The Relationship Between Unbound Consciousness the Cosmic Mind and the Universe

The Five Fundamental Factors have their own implicit order as the crudest layer of the Cosmic Mind. An important property of the hierarchy of implicit orders is the phenomenon of interpenetration. Any level in the hierarchy completely penetrates or pervades each of the lower levels and is in turn completely penetrated by each of the higher levels. But the reverse does not apply. A lower level does not pervade a higher level. For example space/time (ether) penetrates each of the four lower fundamental factors but it does not penetrate the Cosmic Mind. The Cosmic Mind completely penetrates each level of the physical universe, even liquid and solid levels. It is important to appreciate that the Cosmic Mind does not act on matter from the outside; it is not separate from matter. The Cosmic Mind is within matter and acts on matter from within. On the other hand Cosmic Mind is independent of matter and can also exist on the outside of matter.

The Venn diagram in Figure 18 represents the relationship between the Cosmic Mind, the human mind, the 5FF, Tanmatra particles and the theories of particle physics. The arrows represent a causal or controlling relationship; for example the Cosmic Mind generates the 5FF through the compressing action of Prakrti but also further controls the 5FF through the creation and destruction of virtual particles, that is, Pranic force fields. Tanmatra particles arise in the region where the standing waves

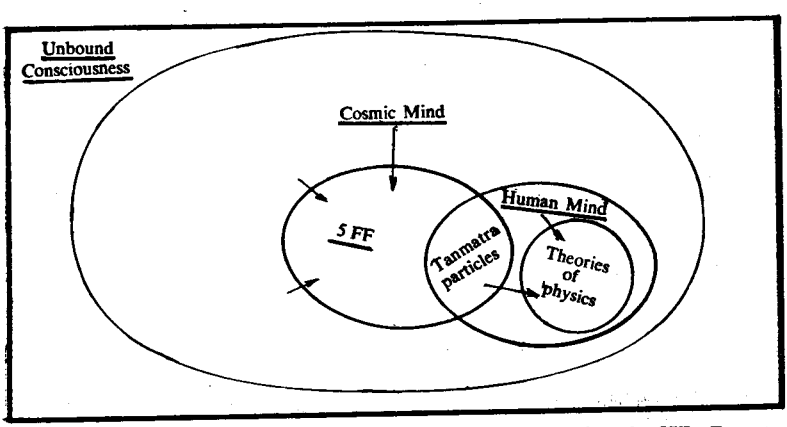

Fig. 18. The Relationship Between the Cosmic Mind, the Human Mind, the 5FF, Tanmatra Particles and Theories of Particle Physics

of the human mind overlap with the standing waves of the 5FF through the mechanism of action and perception described earlier. The human mind then works on its perceptions to produce theories of particle physics. This Venn diagram is offered as a working model and not as a proven fact. It can and will doubtlessly be improved.

It now remains to briefly summarise the characteristics and functions of each of the seven spheres of existence or Lokas. This information is summarised in a concluding table, Figure 19.

Satyaloka : In Satyaloka there is no idea of dualism. Cosmic Consciousness is dominant in this sphere which is described in Eastern cosmology as the sphere of "All-pervading Absolute Truth". There is no English equivalent for this Loka.

Taparloka : Here knowledge is unimanifest and even the 'I' feeling is not clearly manifest but exists in a latent state. There is as yet no English equivalent for this sphere either.

<table>
<tr><th>LOKA</th><th colspan="3">ASPECT OF COSMIC MIND</th><th>ENGLISH EQUIVALENT AND FUNCTION</th></tr>
<tr><td>1. Satyaloka</td><td>Cosmic Mahat and Aham</td><td>Subjective Cosmic Mind</td><td>Causal Cosmic Mind</td><td>No English equivalent ; known in Eastern cosmology as the sphere of "All Pervading Absolute Truth".</td></tr>
<tr><td>2. Taparloka</td><td rowspan="6">Cosmic Citta</td><td rowspan="6">Objective Cosmic Mind</td><td rowspan="4">Subtle Cosmic Mind</td><td>No English equivalent ; knowledge unmanifested and 'I Feeling' exists only in a latent state.</td></tr>
<tr><td>3. Janarloka</td><td>Subliminal Sphere. Wisdom and spiritual knowledge. Archetypes arise here but to human mind they are still subliminal.</td></tr>
<tr><td>4. Maharloka</td><td>Supra-mental Sphere. Origin of dialectical processes. Opposites created.</td></tr>
<tr><td>5. Svarloka</td><td>Subtle Mental Sphere. Rational blue print for the yet to be created physical universe.</td></tr>
<tr><td>6. Bhuvarloka</td><td rowspan="2">Crude Cosmic Mind or Realm of 5FF.</td><td>Crude Mental Sphere. The implicit order for Prana, vital energy etc.</td></tr>
<tr><td>7. Bhuloka</td><td>Physical Universe. The material world, but still internal to the Cosmic Mind.</td></tr>
</table>

Fig. 19. Table of the Lokas, their Names and Characteristics

Janarloka : Wisdom, detachment and spiritual knowledge arise in this sphere. Archetypes also arise here. The human mind can enter this sphere but the experiences cannot be grasped or formalised. Hence this sphere is sometimes called the subliminal sphere.

Maharloka : In this sphere the first hint of desire arises; that is, Samskaras or the potential reaction to people's past actions first vibrate in this sphere. The first yearnings for spiritual development also take place here. Desire, as we discovered in the last chapter, arises where there is the creation of separation and differences. Opposites are created in this sphere but since the opposites remain linked, they appear as contradictions. Hence this layer of the Cosmic Mind is perplexing to the logical human mind. Nevertheless, the logical human mind knows that the Maharloka must exist because when the chain of cause and effect is traced back in logical fashion, the end point is contradiction. Dialectical processes have their origin in this sphere, which is also called the supra-mental sphere.

Svarloka : It is in this Loka that humans experience pleasure and pain. Heaven and Svarloka are synonymous. Pleasure seeking people perform righteous deeds believing they will attain heaven after relinquishing their physical body. Samskaras exist in this sphere. It is the popular belief among Christians, Mohammedans, Jains and ritualistic Hindus that the fruits of virtuous deeds are enjoyed in Svarloka or heaven. This sphere is also called the subtle mental sphere.

Bhuvarloka : It is through this sphere that the Cosmic Mind directly creates, controls and enjoys its physical creation. This is the level of mind engaged in working the physical body. All the tendencies like appetite, avarice, sleep and indolence relate to the physical body and the vibrations of these potentialities as a whole take place is the Bhuvarloka. This sphere is also called the crude mental sphere.

Bhuloka : This is the sphere of the physical creation, the Five Fundamental Factors.

The seven Lokas are related to one another in a sequential and causal manner. Unbound Consciousness is acausal and the first cause. As Consciousness becomes increasingly bound by Prakrti, Prakrti exhibits at first psychic manifestations and finally physical manifestations. The five layers of the Cosmic Mind can

only be directly experienced through the human mind. Even the five layers of the Bhuloka (the 5FF) are not perceived directly through the senses. Through a combination of sensory perception and intellect, physicists have come to recognise the existence of the Bhuloka and the Bhuvarloka. Quantum events also hint at the Svarloka. But ultimately physics will not be able to penetrate the layers of Cosmic Mind. Physics can only tell us that these other Lokas must be there, but psychics can tell us that anyway. Perhaps this is why Professor of Physics at Sydney University, Brian McCusker, said in an A.B.C. radio talk, "Physics, as a fundamental science, is, I think, just about played out. Newton foresaw this. He said, 'Physics—beware of Metaphysics'..... Towards the end of his life he (Newton) said, 'I know not what I appear to the world, but to myself I seem to have been only like a boy playing on the seashore and diverting myself in now and then finding a smoother pebble or prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me'. Our new science is the study of this ocean, and that study, I believe, is where the future of science lies." The new science to which McCusker refers is the study of mind and Consciousness.

THE ORIGINS OF LIFE

Brahmacakra, the cycle of creation, is a two stage cycle. In the first stage Consciousness is apparently bound, confined and crudified by the Operative Principle, Prakrti, culminating in the formation of solid matter. In the second stage, Prakrti gradually releases its grip on Consciousness so that Prakrti regains the characteristic of Purusa, terminating its binding operation. The first stage of the Brahmacakra cycle is known as Saincara and it has been the topic of the previous three chapters. We now turn to the second stage which is known as Prati-saincara. Parti-saincara is not the simple reverse of Saincara since this would necessitate a withdrawal of the thought projections of the Cosmic Mind. The journey from Unbound Consciousness to matter goes by way of the Cosmic Mind; but the journey from matter to Unbound Consciousness goes by way of the unit mind. The journey from Cosmic Mind to matter may be described as inorganic devolution, while the return journey is organic and psychic evolution. See Figure 20.

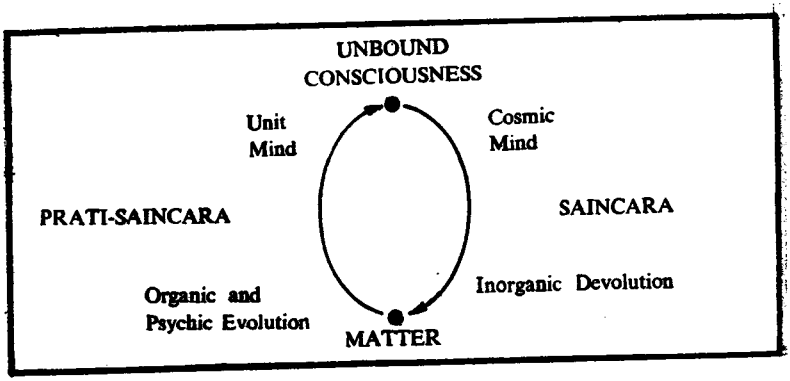

Fig. 20. The Cycle of Creation

Life is defined in the philosophy of Brahmacakra as a parallelism between mind and matter; that is, life exists where there is a close cooperation between the activities of mind and matter. By this definition the entire universe is a living entity since we have seen that matter is infused with and dances to the rhythms of the Cosmic Mind. The entire creation as a living entity is sometimes referred to as the Macrocosm. However life in the usual sense of the word refers to those living organisms which consist of a defined physical body, working in conjunction with a unit mind. Each such organism in Brahmacakra philosophy is referred to as a microcosm.

Life begins where matter, as a result of physical clash and internal chemical changes, is transformed into a subtler vibration, that is, crude mind or Citta. The appearance of life marks the transition between Saincara and Prati-saincara.

This chapter attempts to reconcile the origins of life stories of the biological science with Brahmacakra philosophy. The reconciliation is difficult because biological science has little to say about the origins of life, (it hasn't ever been observed), and we have little understanding about the role of aerial and etherial factors in living organisms. It is these factors that we would expect to be transformed into Citta. Nevertheless some degree of reconciliation is possible.

Setting the Stage for Life

Our own solar system began to form some 5 billion years ago. It started as a proto-solar gas cloud of hydrogen and helium which collapsed under the impact of a shock wave emanating from a nearby stellar explosion. Obviously our proto-sun captured a rich array of elemental debris in the process. By means as yet unknown, our earth and the other planets broke away from the sun and went into various orbits about it. In its early life the earth was a fire-ball similar to the sun, but due to its small size, the surface layers quickly cooled. The heavier elements such as iron and nickel sank to the centre while the lighter elements such as silicon, the predominant component of rocks, floated on top. The gaseous

elements either evaporated into space or combined chemically thus leaving a thin atmospheric layer of nitrogen and perhaps ammonia.

P. R. Sarkar describes the interior of the earth as liquid factor with an inner core of luminous and gaseous factors slowly being converted to liquid. Geo-physicists believe the inner core is extremely dense and consisting mostly of iron. They believe the outer core is iron in the plasma state, that is, matter so hot and compressed that the electrons are stripped away from their nuclei. Free electrons in this state (liquid factor), give rise to the earth's magnetic field, (luminous factor), as it revolves on its axis. There is some similarity between the two descriptions. However scientists know almost nothing about the inner core and our lack of understanding about aerial factor makes it difficult to comment further.

High temperatures and pressures inside the earth resulted in the formation of numerous chemical compounds. Volcanic eruptions and other earthly upheavals mixed the inner and outer layers of the earth, so bringing a rich variety of chemical compounds to the surface. As the earth cooled further, water vapour in the atmosphere condensed to fill the valleys with ocean water. With the advent of liquid water on planet earth, the stage was set for the emergence of life.

Life According to Brahmacakra

The formation of life according to Brahmacakra philosophy depends on the formation of stable physical structures in which the play of exterial and interial forces is finely balanced, resulting in the formation of a centre or nucleus. Atomic nuclei, atoms, stars and galaxies all represent structures of this type. However in living organisms, the interial and exterial forces become very closely coordinated and they are controlled from a common nucleus. In this case the collection of exterial and interial forces is referred to as Pranah or vital energy.

As a result of the clash between the interial and exterial forces some matter is pulverized into Citta with the consequence that a portion of the 5FF within the organism is consumed.

Therefore a second condition for the emergence of life is that the environment should contain the necessary factors and in the right proportion to replace those used up or worn out.

Just as in the process of Saincara, where the factors formed standing waves and acted as templates on which the cruder factors were laid down, so in living organisms, Citta adopts standing waves forms which act as templates for the physical part of the organism. In living organisms there is a close co-operation between mind and matter. Matter gives rise to mind but mind acts as an organising force field for the matter which gives rise to it. This is a self-reinforcing process.

Life in the Biological Sciences

All the organisms which biologists describe as living have similarities in structure and function. The structure of all known living organisms are built up of cells. The cell is the smallest unit of life. Although small, even the simplest living cells have incredibly complex structures. The gap between the most complicated inert crystal structures and the simplest living cell is so great that biologists have no conception of the events which bridged the two. Viruses help to fill this gap but even their structure is simple compared to that of a cell.

P. R. Sarkar refers to stars as living celestial bodies. For most of their lives stars are stable structures and their interial and exterial forces may share a common nucleus. From a biological point of view however, it is most unlikely that stars are living in the sense of possessing Citta because their internal physical structure is too simple.

The most significant features of cellular structures are the chromosomes and convoluted membranes. Cellular protoplasm was once thought to be a jelly like soup of chemicals with little internal structure. It is now known to be a mass of membranes convoluted in regular orderly patterns. Even the cell organelles are membrane structures. Cell membranes are not just scaffolding or passive structures of containment; membrane structures are themselves a key to the origin of life.

Living things share two general functions—growth and homeostasis. They grow in two ways—by increasing their

mass/volume and by increasing their numbers through reproduction. Homeostasis refers to the ability of living things to preserve their internal integrity even while outside environmental conditions may change. The chemical substances and structures that make up life are extremely delicate but living organisms have the capacity to preserve these from detrimental environmental influences, within limits of course.

Both growth and homeostasis require the expenditure of energy, hence living things eat, respire and excrete. Irritability, or the response to stimuli, and movement are two further consequences of growth and homeostasis. Biologists look for some or all of these characteristics when determining whether something is living or not.

Two Theories of the Evolution of Life

The origin of life is shrouded in mystery. The two theories discussed below owe more to speculation than to knowledge. The first is several decades old and suggests that life arose out of a primordial organic broth. The second theory is more recent and may be called the Clay Feet Theory. Both theories begin with an earth that is warm and moist. The atmosphere probably consists of water vapour, carbon dioxide, nitrogen and ammonia. The oceans are already salty and the land is scattered with salty lakes and pools. This scenario is the primordial inorganic broth.

The Organic Broth Theory. According to this theory the atmosphere of the primitive earth was raked with lightning bolts and ultraviolet radiation. There was no protective ozone layer. Under these conditions inorganic compounds and carbon dioxide fused to form simple organic compounds which dissolved in the rain and ocean waters. In the pools and oceans, lightning and ultraviolet radiation fused simple organic compounds into simple proteins, sugars, lipids and nucleotides. This much at least is feasible in terms of known chemistry. For example, in 1952 Urey succeeded in synthesising proteins and nucleic acids in a test tube by running an electric current through a broth of ammonia, methane and hydrogen in water, just like the primordial oceans might have been.

According to the theory, chance combinations of nucleotides and amino acids produced the right combinations of DNA, RNA and protein enzymes. At some critical point, the DNA and RNA began to self-replicate, catalysed by the protein enzymes. Biologists believe that simple systems of replicating RNA would have been able to evolve through mutation and natural selection. This is still a long way from a membrane bound cell—in effect the pool was itself the cell. Molecular biologists have created such simple systems of replicating and evolving RNA in their laboratories. These are purely chemical systems and could not be described as living. But they are at least a starting point for the physical basis of life. Figure 21 summarises the Organic Broth Theory.

The Clay Feet Theory. For a full account of this theory see Scientific American July 1985. The fact that laboratory experiments can convert an inorganic broth into an organic broth is just a red-herring, says the Clay Feet Theory. It is far more probable that the first replicating systems were based on an inorganic chemistry. The theory argues that the first replicating and evolving systems were not RNA and DNA but clay crystals whose chemistry was based on silicon and aluminium. Information in these clay crystals would have been encoded into crystal shapes, and mutations in shape would have been replicated in the growing crystals. Large crystals would have broken into smaller pieces which were transported by water currents.

The Clay Feet Theory envisages that organic processes began by simple organic molecules attaching themselves to the clay crystals. The crystal shapes would have determined what compounds attached themselves, and crystal chemistry would have catallysed the formation of more complex organic com-

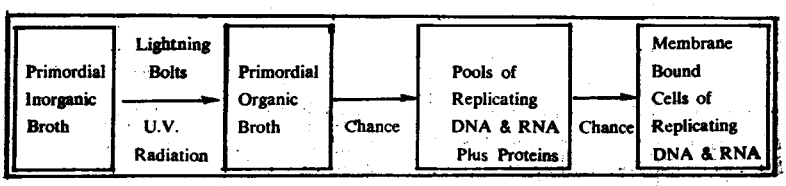

Fig. 21. The Organic Broth Theory

pounds. The organic processes of life began not in primordial suspension but on the surfaces of special types of clay crystals. Eventually the organic reactions acquired some independence and the clay crystals became redundant. It is possible that membrane bound systems at first included the clay crystals. Figure 22 summaries this theory.

It should be emphasised that in both theories speculation outweighs knowledge.

The Role of Chance

Both of the above theories place a lot of reliance on the role of fortuitous or chance combinations of compounds. For example, the average protein consists of a chain of 300 or so amino acids, and there are 20 choices of amino acid for each link in the chain. Is it at all feasible that by a process of random combinations the magic combination of DNA, RNA and protein sequences could have been formed to constitute a self-replicating system? And this is not even a living system. There is still another chasm to cross in order to arrive at the simplest known living systems, that is bacteria. Scientists talk glibly about chance combinations of chemicals but what does it mean in practice?

The simplest bacteria requires about 2000 different proteins for structural and catalytic purposes. The well known astronomer Sir Fred Hoyle and his associate Prof. Wickramasinghe did some sums, and making very generous allowances they each independently calculated the chance of this combination of proteins arising by random processes in the last 4.5 billion years, the approximate age of the earth. The answer was one chance in 10^{40000}—ten raised to the power of 40,000. Says Wickramasinghe, "For life to have been a chemical accident on Earth

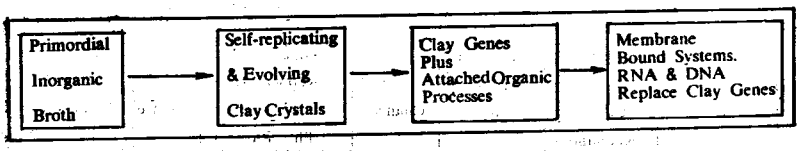
Primordial Inorganic Broth
Self-replicating & Evolving Clay Crystals
Clay Genes Plus Attached Organic Processes
Membrane Bound Systems. RNA & DNA Replace Clay Genes

Fig. 22. The Clay Feet Theory

is like looking for a particular grain of sand on all the beaches in all the planets in the universe—and finding it! For it to have happened anywhere in the universe is like looking for and finding that grain on a single beach—still quite unacceptable."

Says Hoyle, "Once we see...that the probability of life originating at random is so utterly miniscule as to make it absurd, it becomes sensible to think that the favourable properties of physics on which life depends are in every respect deliberate." Hoyle argues that the evolution of life must have been guided purposefully by a higher intelligence. "It is almost inevitable that our own measure of intelligence must reflect higher intelligences, even to the limit of God." And who or what is God? God, say Hoyle and Wickramasinghe, is the universe. So once again, this time at the macro-level rather than the micro or quantum level, scientists are forced to acknowledge the existence of an Intelligence behind the play of the material world.

Although the existence of an Intelligence behind the material world overcomes the obstacles posed by extreme improbability, nevertheless Hoyle does not believe that life originated de novo on planet earth. We might say that even an Intelligence would not chose to do things in a highly improbable way. The first clues we have to life on earth are stromalite fossils some 3.1 billion years old. They are layers of lime laid down by primitive blue-green algae which nevertheless are extremely complex organisms when compared with viruses. The oldest dated rocks on earth are 3.8 billion years old and it is believed that the first rocks solidified about 4.5 billion years ago. See Figure 23. Thus according to the present evidence, life on earth evolved within a time span of approximately 1 billion years.

According to Hoyle and Wickramasinghe, it stretches the imagination too much to believe that life could have evolved from a chemical broth in such a short time. In their book "Evolution from Space", they propose that the seeds of life were sown on earth from outer space. They propose that simple virus like structures can survive in space and indeed continue to arrive on earth from outer space all the time. That is, life arrived on earth already partly built. Although this proposal was greeted by the scientific community at the time with scepticism, scientists have since learned that a wide variety of simple

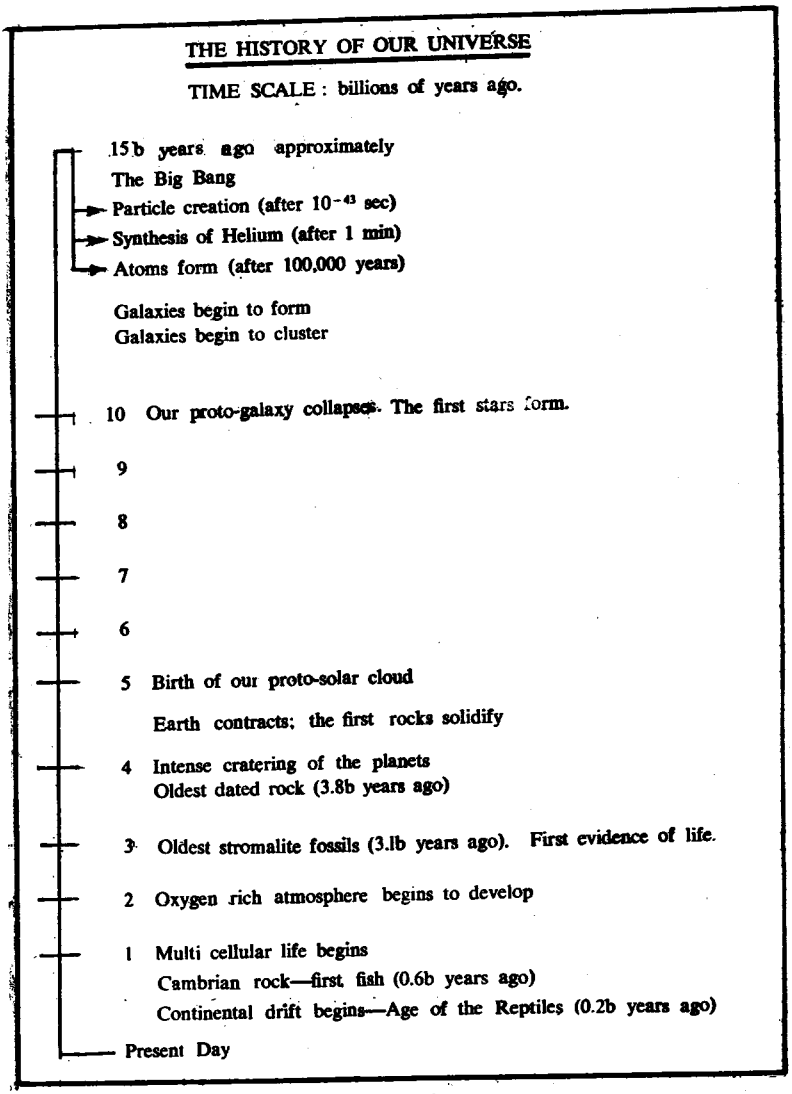
THE HISTORY OF OUR UNIVERSE
TIME SCALE : billions of years ago.
15 b years ago approximately
The Big Bang
Particle creation (after 10^{-43} sec)
Synthesis of Helium (after 1 min)
Atoms form (after 100,000 years)
Galaxies begin to form
Galaxies begin to cluster
10 Our proto-galaxy collapses. The first stars form.
9
8
7
6
5 Birth of our proto-solar cloud
Earth contracts; the first rocks solidify
4 Intense cratering of the planets
Oldest dated rock (3.8b years ago)
3 Oldest stromalite fossils (3.1b years ago). First evidence of life.
2 Oxygen rich atmosphere begins to develop
1 Multi cellular life begins
Cambrian rock—first fish (0.6b years ago)
Continental drift begins—Age of the Reptiles (0.2b years ago)
Present Day

Fig. 23. Time Chart for the Evolution of Our Universe

Whether galaxies were formed before stars or vice-versa is still a matter of dispute.

organic compounds are formed in space; that is, outer space is much more organic than was previously thought.

The typical living cell studied by biologists contains a number of smaller membrane organelles : the nucleus, the site of chromosomes; mitochondria, the site of respiration; and the chloroplast, the site of photosynthesis in plant cells. There is good evidence to suggest that these organelles were once themselves independently living structures which eventually became packaged within a single membrane to form the modern cell. That is, the original living structures might have been simple mitochondria or chloroplast like organisms. Blue-green algae, for example, might well be decendants of the orginal protocloroplast. For the time being this is about as much as we can say about the origins of life.

Chromosomes and Samskaras

Matter as we saw in chapter two, is trapped between two boundaries; the upper boundary being the speed of light, the lower boundary being Jadasphota. Using loose and figurative language we can imagine that matter is under considerable pressure to find an escape route because the force of Prakrti is continually generating matter out of the Comic Mind.

We can compare matter to a mouse in a maze. Matter, like the mouse, does not like to be bound. Matter attempts to escape by the direct route—Negative Saincara—but this path is ultimately barred to it. In the same way the mouse cannot escape the maze by jumping over the fence. Matter has no choice but a trial and error search down numerous corridors until it finds the way out. Just as the mouse will try the obvious corridors first, so matter initially forms simple compounds and then more and more complex compounds. The mouse noses around randomly at first, but with increasing intelligence. As the search becomes more difficult the mouse increases its skills of memory and reasoning. Likewise it appears as if some memory and intelligence must be at work within matter, if it is to find the highly improbable combinations that lead to the production of Citta. Once an escape route is found, the mouse does not readily forget it. Likewise, once the path is discovered, the con-

version of matter into mind becomes a spontaneous reaction driven by the gradual relaxation of Parkrti's hold on Purusa.

The point at which matter becomes organised into a system that can produce Citta or unit mind is a momentous event in the cycle of Brahmacakra. Prior to the formation of Citta, the construction of the material basis of life-to-be is an up-hill, anti-entropic struggle. The structures are highly improbable, stable only at low temperatures, and can easily disintegrate if environmental conditions change. But after the formation of Citta, the animate evolution of life is a spontaneous process because Citta functions as an organising force field. It acts as a template on which matter can be structured so as to give rise to more Citta. This is a positive feed-back mechanism, so the conversion of matter into Citta is an ever accelerating process. We perceive this as the accelerating rate of biological and psychic evolution on planet earth.

Nevertheless, the first forms of animate life rest on the inanimate structures created prior to the appearance of Citta. The dominant feature of the inanimate structure was DNA, and the dominant feature of DNA was that it could replicate and store information, coded in the sequence of its nucleotide bases. From the biological point of view, chromosomes are the driving force behind life. They contain all the genetic information which draws together a chaotic mixture of minerals and organic compounds into a highly complex organic structure. The chromosomes contain DNA, and using figurative language once again, the DNA molecules fulfill a number of functions. They are similar to the mouse's memory of the maze, in that they are a store of information of successful combinations of matter tried in the past. DNA is a complex molecule with highly improbable structure. It is a store of neg-entropy. It is also a form of potential energy because it has the capacity to generate order out of chaos. DNA molecules are the material source of the interial force which holds a living organism together.

From a spiritual point of view, the potential energy encapsulated within chromosomal DNA is referred to as Samskara. Samskaras are the store or seeds of actions not yet expressed. They are desire in chemical form. The desire of matter to escape its bondage is expressed far more intensely in the structure of a DNA molecule than it is in say the explosion of a

star. DNA molecules store the accumulated momentum of all the physical processes in the universe. All the crude and subtle capacities of matter are stored in DNA and the accumulated momentum so stored provides the material impetus for Prati-saincara, the long path of organic and psychic evolution.

In popular literature, entropy is perceived as an anti-life or exterial force. It is a randomising influence that destroys the delicate balances of life. It generates mutations which most often lead to disease and mis-shapeness. However, we shall see that entropy is also integral to the every expression of life.

Life Requires a Space

Stable physical structures come in a variety of sizes. Figure 24 lists the sizes of the five basic structures in creation.

It is obvious that a tremendous size gap occurs between the atom and the star as compared with the gaps between other structures. From an aesthetic point of view, this gap is unpleasing; nature should have a better sense of proportion and symmetry! However, this gap takes on a special significance when we appreciate that it is filled by living organisms. The size of a single animal cell is of the order of 10^{-5}m while that of a human being is of the order of 10^{0} m or 1 meter.

STRUCTURE	DIAMETER (order of magnitude in meters)
Proton	10^{-15} m
Atom	10^{-10} m
Star	10^{9} m
Galaxy	10^{21} m
Universe	10^{26} m

Fig. 24. The Magnitude of Basic Structures in Creation

Nature now reveals a more orderly sequence, illustrated in Figure 25.

There is a style of reasoning sometimes used in scientific cosmology known as the Anthropic Principle. It says that the physical laws of the universe are the way they are because a universe obeying any other laws would not have been able to produce life. The universe exists to produce life and life to produce human beings. There is such a degree of fine tuning and coincidence in our universe that the Anthropic Principle enjoys a degree of respectability amongst scientists. The Anthropic Principle can be invoked here to explain something of the properties of life as we know it.

All stable structures achieve stability through the fine tuning of exterial and interial forces. It is possible to argue that each nucleated stable structure must find for itself a niche where it can be protected from the violent interial/exterial clash of other structures. For example, if living cells had developed on too large a scale they would have succumbed to the violence of stellar processes. If life had developed on too small a scale it would have succumbed to the uncertainty principle which operates at the atomic level. Instead life evolved in a niche where it was safe from destruction on either side, and this niche was provided in the space between stars and atoms. Likewise the

STRUCTURE	DIAMETER
Proton	10^{-15} m
Atom	10^{-10} m
Living Cell	10^{-5} m
Human Being	10^{0} m (1 meter)
Star	10^{9} m
Galaxy	10^{21} m
Universe	10^{26} m

Fig. 25. The Magnitude of Basic Structures in Creation, Including Human Beings and Cells

special qualities of human life could only develop once the human physical structure could escape the clashes of purely cellular life.

Between the human being and the star there is a size gap of 10^9 meters. Judging by the orderly sequence of 10^5 m steps from proton up to person, there is space for one more nucleated living structure. This might be the biosphere (10^7 m) with its associated collective mind, or a form of life not yet hinted at. We would expect the biosphere/collective mind to have a subtlety and potentiality as much beyond the present day humans as humans have beyond the single cell.

There are other restrictions that we must place on the niche in which life can evolve, particularly those of temperature and pressure. The primaeval substance of the universe is hydrogen. It was formed in the chaos just after the Big Bang when temperatures and pressures were inconceivably great. Hydrogen is fused into an array of 100 or so elements within stellar furnaces. Temperatures and pressures for this are enormous but less than in the Big Bang. Next the elements are combined into a bewildering array of inorganic compounds within the earth. Here the pressures and temperatures are great but much less than within a star. In the next step, inorganic compounds are converted into simple organic compounds on the earth's surface. Here the temperatures and pressures are at the comfortable levels to which life has become accustomed. But the point is, complex organic molecules are not able to withstand high temperatures, and complex living structures are even more sensitive. Organic life can only survive in a narrow band-width of temperature and pressure. If the home planet is extremely large and the force of gravity very powerful then complex structures will not be able to maintain their integrity. It seems likely therefore that the range of conditions under which life can survive, even forms of life not based on aqueous chemistry, if such exist, is extremely narrow. The strengths of inter-atomic forces are such that complex chemical structures can only hold their shape when conditions do not depart too far from those which appear on the surface of planet earth. Employing the Anthropic Principle again, it appears as if the size of planet earth and its surface conditions are so finely tuned that the appearance of life can hardly have been an acci-

dent. Readers interested in pursuing this line of thought should read "The Quest For Gaia" by Kit Pedler (1979).

Mind is the Product of Physical Clash and Chemical Reaction

In non-living physical structures, the clash of interial and exterial forces is loosely coordinated. For instance, in a star, the major exterial force is radiation, photons, emanating from fusion reactions in the stellar nucleus. This radiaton counteracts the interial force of gravity which is attempting to collapse the star. However these interial and exterial forces are only loosely coordinated and consequently the star fluctuates widely in size during its life time.

In living structures the interial and exterial forces are more tightly linked and their clash is more closely controlled from a common nucleus : "...whenever and wherever, as a result of the clash, a portion or portions of the physical body get powdered down, that, transformed into subtler factors.....the effect is known as unit mind or microcosm. We find that within the unit structure the mind is a chemical reaction of physical clash....." ("Idea and Ideology" p. 11).

The question arises as to what chemical processes within the cell give rise to unit Citta. We cannot answer this question fully because the biological sciences are still in a comparatively crude stage. While the physical sciences have undergone revolutionary changes in the 20th century, the biological sciences still function on the 19th century paradigms of science. Living organisms are still understood only on the level of atoms and molecules. In terms of the 5FF, biology has made a detailed study of the solid and liquid factors within living organisms but is only just beginning to recognise the role of the luminous factor, that is electro-magnetic fields. For instance e/m fields are believed to direct cell division and embryonic development. There is emerging evidence that low level background radiation from high tension wires and microwave dishes adversely affects foetal development. By contrast the role of aerial and etherial factors within living organisms is completely beyond the scope of current orthodox biological theory and technique. As sug-

gested previously, it is most likely that the radionic fields described by alternative therapies are in fact standing waves of aerial and etherial factors.

While we cannot describe the chemical reactions that create life directly, we can employ a fairly accurate analogy, namely the wire coil used in a radio tuner. When an electric current passes through a wire coil, a magnetic field is generated; this is standard physics. But let us analyse the process from the point of view of Brahmacakra philosophy.

The two requirements are a charged battery and a coil. Both of these are low entropy, high potential energy structures. As explained before, the battery is a device which stores separated charges and the wire coil is a precisely ordered structure. When the switch is turned on there is a spontaneous flow of electrons—liquid factor—through the wire driven by the force of entropy. This in turn gives rise to the magnetic field, a standing wave of luminous factor. There are three significant features of this examples: movement within a cruder factor gives rise to a subtler factor; the transformation can only occur when the force of entropy is allowed to drain a source of potential energy; and the source of potential energy is two fold—a combination of charge separation and orderly structure. If one of these is missing the magnetic field is not created.

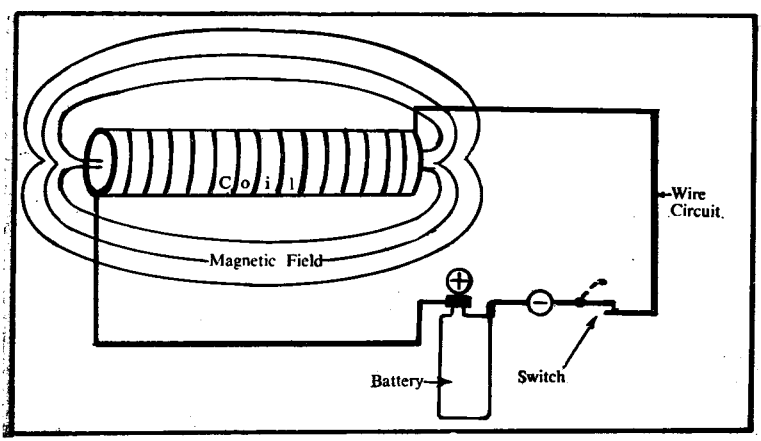

Fig. 26. The Generation of a Magnetic Field From a Wire Coil

In living organisms, the convoluted membrane is analagous to the wire coil and the cell becomes a charge separation device. The simplest bacterial cells consist of a single membrane—a coil with one turn of wire—enclosing a single chromosome and a variety of enzymes. The membrane is embedded with enzymes which expells sodium (Na^+) ions from the cell and imports potassium ions (K^+) into the cell. This process requires energy which comes from respiration. The result is two opposing concentration gradients, one of sodium ions, the other of potassium ions. The spontaneous diffusion of these ions back through the membrane, driven by the force of entropy, creates a charge separation because potassium diffuses out faster than sodium diffuses in. The interior of the cell acquires a net negative charge. Since the interior is also moving—protoplasmic streamings—e/m fields are generated across the membrane. See Figure 27.

In some as yet unknown way, these reactions also convert matter fields into Citta fields. Since the bulk of the Citta field is outside the cell it is referred to as 'exo-plasm'; the interior of the cell is 'endo-plasm'. It is significant that as cells evolved, they acquired more convoluted membrane systems, analagous to adding more turns of wire to a coil so strengthening the fields generated. When the limits to membrane convolution were reached, cells joined together in filaments, sheets or spheres to create larger Citta fields. The Citta field is a standing wave with a particular dimension. The larger the volume of the field,

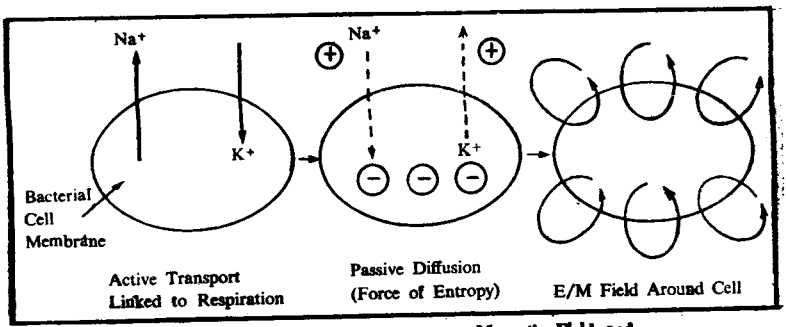

Fig. 27. Comparison Between Magnetic Field and a Living Cell

the longer and therefore more subtle its wave-length. Enlargement of mind is also accompanied by an increase in mass. We may infer this to be an increase in the number of Citta particles.

In chapter two it was explained how the force of entropy can be linked to other systems to make them do work. For instance a battery can be linked to a pump to drive water uphill. In the living cell, energy transformations of this kind are linked in long chains. The exterial force of entropy can be used to create an interial force. For example, the charge separation process described in the bacterial example above can be represented diagramatically is Figure 28.

The entire metabolism of a cell consists of chains of energy transformations of this type. High potential energy compounds decay in a controlled manner to create other high potential energy compounds. High potential energy DNA molecules are used to create high potential energy membrane structures which support the other energy transformations. Without the membranes no charge separation would be possible. The combination of membranes and the clash between interial and exterial chemical reactions generates a Citta field, but we will not be able to understand this mechanism until we learn how aerial and etherial fields contribute to living organisms.

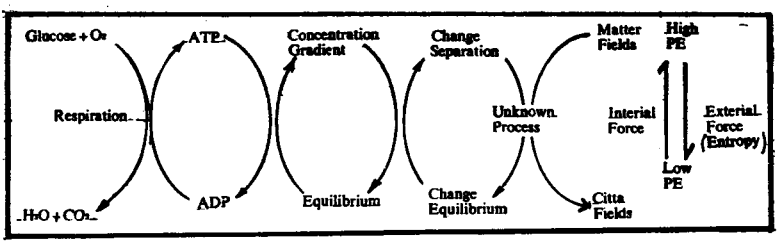

Fig. 28. Charge Separation in a Bacterial Cell

The path of Saincara is analytic and centrifugal. As might be expected, the path of Prati-saincara is synthetic and centripetal. In the first part of the cycle of Brahmacakra, Consciousness is increasingly bound by Prakrti causing the formation of the Cosmic Mind and the universe. In the second half of the cycle, Prakrti releases its grip on Consciousness resulting in the formation of unit minds. As Prakrti's binding action gradually ceases, it regains the characteristic of non-attributional Consciousness.

Synthesis and Centripetal Evolution

The synthetic nature of Prati-saincara becomes obvious when we look at the evolution of life in its entirety. In the initial stages there existed the simplest organelles, the precursors of todays mitochondria, bacteria, chloroplasts and blue-green algae. It is almost certain that the typical plant or animal cell arose by an enfolding or synthesis of several different organelles within the one cellular membrane. Although primitive, these early organelles and unicells had associated with them a primordial mind—a kind of organising force field around the cell maintaining its structural integrity.

Multicellular organisms came about by a synthesis of unicells and the minds associated with these multi-cellular organisms became increasingly complex. In mammals some emotional capacity developed, and in humans rational and elementary intuitive capacities. In all of these multicellular organisms, each individual cell has undeveloped instinctive mind (Citta) associated with it. The combination of these cellular minds is synergistic. That is, the unit mind is more than might be expected from the sum of all the cellular minds. The human mind has developed so rapidly that it is impossible to reduce its emotional, rational and creative capacities simply to cells and neurons. For instance materialistic models of the brain which assume synapse connections to function like transistor switches of a computer memory, are totally inadequate to account for the enormous retentive and creative powers of humans.

Besides, hydrocephalics with only five per cent of normal brain matter, function as quite normal people.

The human mind is not isolated. We communicate with one another through speech, vision, the written word and so on. Groups of people can work collectively to perform incredibly complex tasks such as building a space shuttle. They can do this only because their minds are functioning collectively. It is even possible for people to know one another's internal states of mind through intuition and other forms of psychic communication. To the extent that humans have shared experiences, ideas and understandings, to the extent that they can communicate these with one another, then it is valid to speak of a collective mind. Because humans are social beings and are very dependent on social interaction for their individual survival, the development of a collective mind has been a vital component of human evolution. Furthermore, just as there is a synergistic jump from the cellular minds to the human mind, so there is a synergistic jump from the many human minds to the collective mind. The collective mind is more than the sum of its component parts. The origins of the collective mind are summarised in Figure 29.

Note that this synthetic process creates a nested hierarchy of Citta standing waves; that is, cellular mind within unit mind and unit mind within collective mind. There is a dynamic equilibrium between any level of mind and the level above and below it. The lower level is the raw material for the construction of the upper level, but the upper level acts as a directing and organising influence on the lower level.

The logical conclusion for the synthetic sequence in Figure 29 is the synthesis of all collective minds into the Cosmic Mind. It is reasonable to suppose that there would be one or more

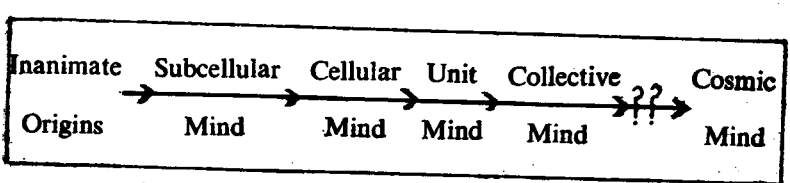

Fig. 29. The Synthetic Flow of Evolution

intermediate steps between the collective mind and Cosmic Mind, but these are as yet unknown. Perhaps a clue comes from certain mystics who believe that there is a mind or personality associated with our solar system and our galaxy. This after all is only one step removed from Gaia, the believe that an Intelligence is associated with planet earth.

From a biological point of view, the most visible and obvious aspect of evolution is the development of more and more complex organic structures. But we should remember that no matter how complex or subtle, biological structures still belong to the realm of the 5FF. The most significant aspect of Prati-saincara is the development of mental capacity. Physical evolution is of interest to us only in that it forms the material basis for mental processes. Biological structures give us clues as to what is happening at the mental level; they reflect mental processes. For example, the synthetic nature of Prati-saincara is revealed on both the mental and physical levels.

The synthetic trend of evolution can also be perceived in human civilisation. The primitive human beings were, according to P. R. Sarkar, dominated by individualistic instincts. Early on humans developed a collective sentiment which gave rise to tribal groupings and some collective enterprise. The emergence of a sense of duty led to the formation of family units within tribal groupings. Gradually tribes formed into clans, clans into provinces, provinces into nations and today human civilisation is on the verge of becoming planetary.

Parallelism Between Mind and Body

During Prati-saincara mind evolves out of matter and consciousness evolves out of mind. In the early stages of evolution the expressions of life are predominantly physical, subsequently the psychic expressions dominate and in the concluding stages spiritual expressions dominate. The entire gamut of animal evolution from the first unicells to the appearance of human beings is dominated by physical expressions. Human evolution to date represents a transition period, and according to P. R. Sarkar we are entering a phase of Prati-saincara where psychic expressions and development will assume greater importance

than any other. And at some future time spiritual expressions will assume greater significance than either the physical or the psychic. Human expressions are becoming more subtle, more powerful, more insightful, more self-determined and more self-conscious, and this evolutionary trend will continue in the future.

Because in any organism there must be a parallelism or close cooperative functioning between body and mind, a study of the former, particularly the sensory and motor organs, will provide clues as to the latter. In the course of evolution there has been a sequential development of more subtle sensory and motor organs to enable the expression of more subtle mental activities. The functions of absorption, elimination and reproduction dominate in the unicells, while multi-cellular organisms have more developed physical and psychic expressions. Through the invertebrates and fish there is a progressive development of sight, touch and locomotion and there is a simultaneous diminishment in the dominance of the cruder organs. As human beings evolve, their psychic and spiritual potential increases.

Sarkar comments on this process : "Biologically also we find that the more the unit (organism) is backward or low, the stronger are its Tamogunii (crudest) organs. In the extremely undeveloped or unicellular organisms we find no sexual distinction. Due to their extraordinary sexual power they disintegrate their bodies into parts (shizogenesis or reproduction by fission) according to necessity, for the maximisation of their species. But with the unit (organism's movement) on the path of progress and higher mental development, the power of their (lower) organs starts waning. With the result the higher organisms cannot (alone) bring forth their progeny.....due to their low sexual potentiality. So in them the distinction between male and female has become a necessity. ("Subhasita Samgraha IV" 1968 pp. 13-14). See Figure 30.

Continuing in the same vein, we observe in amphibians and reptiles the development of simple manipulative skills, the further development of the sense of touch, and the development of a simple auditory organ. In mammals sight, touch, hearing, manipulation, locomotion and speech are developed to varying degrees depending on environment. In primates and particularly humans, touch, hearing, manipulation and speech reach their peak of development.

As life evolves it develops expressions which are purely internal, such as sentiment, intellect, sense of duty, intuition and selfless love. These internal expressions give rise to secondary external expressions through the motor organs so giving us clues as to the internal primary expression. In all the simpler organisms from unicells to the first mammals, instinct dominates behaviour; that is, there are no internal expressions of the mind. In mammals however, forms of altuistic behaviour mediated by sentiment become important. For example, mammals give birth and nurture their young whereas reptiles lay eggs and move on.

STRUCTURE	PHYSICAL CHARACTERISTICS	PSYCHIC CHARACTER-ISTICS	SPIRITUAL CHARACTER-ISTICS
1 Uni cell Structures	Absorption Reproduction Elimination No Glands or Brain	Completely Dominated by Instinct	Controlled by the Cosmic Mind
2 Multi-cell Structures (a) Plants	Absorption, Reproduction Elimination, Limited Locomotion and Manipulation No Glands or Brain	Completely Dominated by Instinct	Controlled by the Cosmic Mind
(b) Animals	Developed Absorption, Reproduction Elimination Locomotion and Manipulation Few Glands Undeveloped Brain.	Dominated by Instinct and Undeveloped Intellect	Controlled by the Cosmic Mind
(c) Humans	Highly Developed Absorption. Reproduction Elimination Locomotion and Manipulation Complex Glandular System Developed Brain	Developed Mind Intellect Awakened Dominated by Sentiment	Developed Unit Consciousness Attraction of the Great
(d) Developed Humans	Highly Developed but Subtle Expressions of Absorption, Reproduction Elimination, Locomotion and Manipulation Subtle Glandular System (Developed Pituitary and Pineal Glands) Highly Developed Brain	Pinnacled Intellect Intuition	Mind Absorbed in Cosmic Consciousness.

Fig. 30. Levels of Organic Evolution and their Physical, Psychic and Spiritual Characteristics

Dolphins and whales are renowned for their altruistic behaviour.

In the early humans, behaviour mediated by sentiment gradually became more important than instinctual behaviour. Brahmacakra philosophy recognises 50 basic types of sentiment, known as Vrttis, each of which can be secondarily expressed through any of the motor or sense organs, directed either inwardly or outwardly. This gives rise to the myriad subtle nuances of sentiment that are characteristic of human life. Brahmacakra recognises many types of subtle sentiments which are not yet named in Western psychology.

Although intellect is developed to some small degree in the primates, it was not until the last several thousand years that intellect surpassed sentiment as the dominant internal experience and the primary mediator of human behaviour. Intellect and sentiment remain the primary mediators of human behaviour today. Although sense of duty, intuition and selfless love are also significant, they are not yet the dominant characteristics of our human species as a whole.

The sequence from instinct to sentiment to intellect has its parallel in the anatomy of the brain. The reptilian brain is a simple swelling at the top of the spinal chord. It is responsible for such instinctual behaviour as reproduction, survival, ritual, territoriality and so on. The mammalian brain consists of the limbic system which encircles the old reptilian brain. It generates strong emotions such as pleasure and pain, hope and fear, joy and sorrow. Finally, some 5 million years ago, the proto-humans developed a neo-cortex which wrapped itself around the limbic system. It is responsible for memory, curiosity, logical thought etc. So in human beings there are three different animal brains representing three stages in the evolution of life.

Of particular significance are the many neural connections between the limbic brain. One commentator on Brahmacakra philosophy writes: "It has always been assumed by scientists that emotions and thought are different and separate; emotions being produced in the limbic brain and thoughts in the thinking brain, the rational cortex—with no link between the two brain systems. Recent brain research...(has discovered) many pathways...between the limbic system and the cortex; all sensations

received by the cortex from the environment are first mediated by the limbic brain which suffuses them with moods ranging from rosy anticipation to dark despair. Thus all thoughts start out as feeling tones in the limbic brain and then cycle between the limbic system and the neo-cortex until they are finally amplified into thoughts or ideas in the cortex. The old duality between heart and mind has now finally disappeared—feeling is knowing, and no thought can even be produced in the mind without emotional nuance. These feeling-tones are usually subliminal and are almost totally ignored in our highly verbal culture, except among poets, artists, etc ; and thus people are usually aware only of the informational content of their thoughts and not their emotional colouring. Yet even such purely intellectual concepts such as mathematics are emotionally charged..." ("Neo-humanist Education", Avdt Anandamitra Ac p 32).

The Development Of Unit Mind

The conversion of matter into mind in the process of Pratisaincara is accelerated by a positive feed-back mechanism. The Citta so formed acts as an organising template on which matter is organised so as to produce more Citta. The concept of Citta acting as an organising template for matter is beginning to gain some acceptance in traditional biological science. For example, in 1981 mainstream biologist Dr Rupert Sheldrake published a theory of formative causation ("A New Science of Life" Blond & Briggs, England). Sheldrake suggests that embryonic development is directed not only by genes but by "morphogenetic fields". These fields are non-physical and not confined by the ordinary restrictions of space and time, yet they have the capacity to organise matter. Sheldrake believes that morphogenetic fields are derived from previously existing similar organisms by a process called "morphic resonance". Sheldrake's morphogenetic fields appear to have all the characteristics of Citta fields. The great excitement about the theory of formative causation is the growing body of orthodox scientific evidence to support it.

The accelerating conversion of matter into mind due to positive feed-back is perceived on the macroscopic scale as the accelerating pace of biological evolution through time. But as with any positive feed back mechanism there is a resistance

factor which determines the rate of acceleration. In other words, the conversion of matter into mind is frustrated by and must overcome obstacles.

There are three types of resistance which correspond to the physical, psychic and spiritual stages of evolution. In the first stage the dominant obstacle is on the material level and is the force of entropy. In order for mind to develop, matter must be goaded into more and more improbable structures, and of course this is resisted by the force of entropy. This is the stage of maximum physical clash. Due to the momentum generated by Prakrti during Saincara and the innate desire of matter to escape its confinement, the force of entropy is overcome. This explains why increasingly complex structures are created during the course of evolution apparently in defiance of the force of entropy. Physical clash is the dominant obstacle encountered by life from its very beginnings up to the dawn of recorded human history. It does not of course ever cease since all living things are grounded in a physical body.

As a result of overcoming physical clash, living organisms develop subtle and powerful minds. The greatest development of mind has occured in human beings, so much so that the mind now becomes the locus of evolutionary clash. Different peoples and cultures develop different ideas and their distinct ways of doing things come into conflict. Here the clash is of ideas, and Sarkar calls it psychic clash. It emerged as the dominant component of evolution around the dawn of recorded history and continues today as intensely as ever.

It is the human attribute of free-will which makes psychic clash such a potent problem. Animals, having poorly developed minds, cannot exert any control over their evolution. Due to the momentum stored in their genes and the guidance of the Cosmic Mind, they struggle automatically against the degenerating force of entropy. But human beings can choose to struggle or not to struggle. With human beings the scope for Negative Prati-saincara arises for the first time. Some psychologists refer to this backward movement as "involution". Human beings have memories of the past and they are able to subject their past and present to critical scrutiny. Inevitably different theories or ideologies arise, some of which propose that it is natural for humans to move forwards psychically and spiritually,

while others propose that it is more natural for humans to promote their material existence and enjoyment. All religions, political ideologies, philosophies etc., take a stand on this fundamental question.

The great significance of psychic clash is that the welfare and further evolution of life depends on its outcome. Life means not just human life but all life on planet earth, since all life is in human hands. The many religious, ideological and political struggles in human history are testament to the potent nature of psychic clash. Yet Brahmacakra philosophy is very optimistic on this point. For just as the degenerating force of entropy was slowly but surely overcome during animal evolution, so the de-humanising, life destroying psychic forces that have caused so much misery for human beings will also be overcome ; slowly but surely. Just as matter cannot remain bound forever, neither can mind. In philosophical terms we can say that the foward impetus to evolution comes from a synthetic force, while the backward impetus for involution comes from an analytic or disintegrating force. The speed of evolution appears to fluctuate depending on the relative strengths of the two forces. At times the analytic force achieves some local or temporary dominance, but in the vast span of evolutionary history the synthetic force has obviously been dominant.

In the latter stages of Prati-saincara, the dominant obstacle to foward movement is of a spiritual nature. Here the obstacle is the sense of one's separate existence—sometimes called alienation—and to overcome it human beings have to learn the art of loving. Human beings as a species have not yet evolved to the point where this is the dominant clash, but for many individuals committed to spiritual practices it may be the predominant clash. At this stage the individual becomes aware of the attractive force of Consciousness and has the realisation that behind all the struggles to overcome psychic clash and physical clash, indeed behind the entire gamut of evolution, lies Attraction of the Great as the ultimate motivating force. As human beings accelerate along the path of Prati-saincara under the influence of Attraction of the Great, their minds adopt longer and longer wave lengths; that is, they increase in volume, mass and subtlety. And in the culminating step mind attains infinite

wave length and merges with Cosmic Consciousness. So ends the long and restless journey of life.

It is said that during Prati-saincara, desire decreases. We can understand this as the conversion of the potential energy into the increasing velocity of unit bengs as they speed towards the Great. This potential energy is stored both in the physical chromosomes and in the mind.

Dharma

Dharma is the innate nature or character of something. The Dharma of fire is to burn. If a particular flame did not burn our skin, we would doubt its validity as a flame. In the previous chapter we observed that all living things have two major characteristics—growth and homeostasis—and these may be taken as the innate characteristics of living organisms.

Growth and homeostasis are to some extent contradictory qualities. Growth necessarily implies change and creating new structures, while homeostasis implies preserving an existing delicate equilibrium. Both are inherent qualities of life, yet there is a tension or a conflict between them. The very nature or Dharma of life appears to be founded on conflict!

Growth and homeostasis are qualities not just of individual living organisms but of life when viewed in its totality. The study of the totality of life through time is evoluton. It is obvious that evolution is a manifestation of growth in all meanings of the word. From the first insignificant unicells to the present day, living things have spread in innumerable forms and sizes to occupy every possible niche that planet earth provides. Whether in physical complexity or psychic subtlety, life grows, expands and develops.

However if we look at the totality of life through space or the biosphere at a particular moment in time, then another set of patterns emerge. We discover that life is a cyclical flow of energy and minerals which has buffering or homeostatic mechanisms to correct distortions and imbalances. The biosphere when looked at in its parts is an incredibly complex network that has retained a stable equilibrium over millions of years. Ecology is the study of homeostasis in the biosphere—it reveals the delicate inter-relationships that help maintain the biosphere

as a single living organism. It is this feature which led some scientists to postulate that planet earth and life on it are not two separate systems but one, called Gaia.

Gaia has its origins in scientific empiricism rather than philosophical introspection. In a 1975 paper in the respected scientific journal "New Scientist", three biologists concluded "that living matter, the air, the oceans, the land surface were parts of a giant system which was able to control its temperature, the composition of the air and sea, the pH of the soil and so on, so as to be optimum for the survival of the biosphere. The system seemed to exhibit the behaviour of a single organism, even a living creature. One having such formidable powers deserved a name to match it. William Golding, the novelist, suggested Gaia—the name given by the ancient Greeks to their earth goddess." The article concluded with the fascinating speculation that it is not humans that have developed consciousness but the earth or Gaia, and that it was done so in order to protect itself during Cosmic evolution.

Kit Pedler sees the significance of Gaia in spiritual terms. Gaia can become a source of wisdom and beauty, the inspirational spring infusing human endeavour with meaning and happiness. Gaia suggests its own human ethics, says Pedler. "If we truly want to know ourselves, then we must first know Gaia."

Thus, life has two inherent characteristics—growth and homeostasis. These two mainfest on the macro level as evolutionary impulse and homeostatic impulse respectively. There is a tension or conflict between the two. Life will aways strive for homeostasis but not quite achieve it because growth will always intervene.

With a little further thought it becomes apparent that life has the attributes of growth and homeostasis because it is a form of bound Consciousness. Growth and homeostasis are not accidental characteristics possessed by life but rather innate characteristics of unit mind seeking to escape its bondage. Biologists only perceive growth and homeostasis at the physical level, but we should note that they are equally characteristic of mind. Phychologists studying the human mind observe growth and homeostasis, but at this level they go by other names.

The growth principle in human psychology is perceived as the innate urge of the mind to expand; that is, to discover, to

understand, to encompass more and more of with the external and internal worlds. The mind is impelled to break through all limitations whether they be prison walls, technological barriers or limitations of ignorance and superstition. The mind may temporarily succumb to dogmas—ideas which place a limit on the expansion of the mind—but there will always be some force at work to subvert dogmas. In the long term nothing can stop the desire of the mind for expansion. The growth or expansion impulse is behind the explorer, the adventurer, those who chase endurance records, those who climb mountains because they are there. It is behind scientific investigation, behind those who ask the question why and chase the answer down a long chain of cause and effect until they reach the unknowable. When expansion takes a spiritual bearing, that is, when a person attempts to expand their mind for the purpose of merging it with Cosmic Consciousness, this in Brahmacakra philosophy is known as Vistara.

The homeostasis principle is the urge for peace of mind and freedom from pain. Like expansion, it frequently manifests as a blind or uncontrollable impulse. Homeostasis or harmony is the motivation behind courtesy, behind morality, behind aesthetics, behind sweet music and so on. It is the urge to give everyone adequate food and clothing, the urge to care for everyone's happy and healthy state of mind, to make sure there is satisfying work for everyone. When the harmony principle takes a spiritual bearing, that is, when the human mind surrenders its own desires and merges its flow with the flow of the Cosmic Mind, this is known as Rasa.

Growth and homeostasis are a dialectical pair and some semblance of them can be found in the behaviour of inert matter on the path of Negative Saincara. For example, a gas released into a vacuum will expand to occupy all available space. Driven by entropy, this is an example of the growth principle in the realm of matter. Jadasphota or the bursting of matter is another example. The various Conservation Laws referred to in chapter two (for example "Every action has its equal and opposite reaction") are examples of homeostasis in the world of matter.

Just as Attraction of the Great is the ultimate driving force behind organic evolution, so too it is the ultimate inspiration

behind the Dharma of life. When Consciousness exerts its attractive influence, it manifests as growth and homeostasis in living things or as Vistara and Rasa in human beings. Under Attraction of the Great, the human mind also develops a third characteristic, the desire to do service for others. In Brahmacakra this is called Seva. Here the individual strives to elevate the physical, psychic or spiritual condition of other human beings through selfless actions. It is this impulse which encourages parents to make sacrifices for their children and heros and heroines to sacrifice their lives for noble ends.

Vistara, Rasa and Seva are the three aspects of human Dharma. They are what make human beings human. Each of them derives its inspiration from Attraction of the Great. It should be noted that human Dharma is not a static concept. Its various aspects are impulses to move along the path of Pratisaincara. Hence human Dharma is the basis for forward movement towards Cosmic Consciousness, and the realisation of the quiescence of existence.

In Brahmacakra philosophy human Dharma is a process, an applied method to realise one's own self and negotiate the gap between imperfection and perfection; between relativity and the absolute. It is the supreme union between extreme positivity and extreme negativity. P. R. Sarkar points out that knowingly or unknowingly human beings are running after limitlessness; when they knowingly try to attain the Great and focus all their mental energies to that end, that bearing is called Dharma, and the effort involved is the practice of Dharma or Dharma Sadhana. The stages of Dharma Sadhana, called Astaunga Yoga, are discussed in the chapter on human consciousness.

Anatomy of the Human Mind

Just as the Cosmic Mind has a structure of nested or hierarchical realms, so does the unit mind. The spheres of the unit mind are referred to as Kosas and they correspond in structure and function to the five central Lokas of the Cosmic Mind. See Figure 31. For ease of comprehension, the five layers of the unit mind are frequently referred to as Level 1, Level 2 etc. as per Figure 31, and are introduced in turn

starting with the crudest. Further information will be added about each Kosa in later chapters.

Kamamaya Kosa (Level 1): Kama means physical desire. All living organisms, even the simplest animals and plants, possess this layer of mind. It is concerned with receiving information from the sense organs and transmitting instructions to the motor organs as per the physical desires already stored at this level. Intellect does not operate here—this is the level of action and reaction, instinct and maintenance of physical life. The reptilian brain mediates the work of the Kamamaya Kosa. The attributes of this level are the accumulated heritage of millions of years of animal evolution. All the subtler pursuits of human beings are dependent upon gaining control of this layer of the mind, because it is completely identified with matter. Level 1 is sometimes called the Pranamaya Kosa or level of vital energy.

Manomaya Kosa (Level 2): This level of mind is concerned with four functions—the experience of pleasure and pain, memory, thinking and intellect and dreaming.

If sensory information is passed up to this level of mind, then a person will experience pleasure or pain or any of the sentiments that are mediated by the mammalian brain. Memory, rational thinking, symbolising and abstraction, all mediated by the neo-cortex, are additional functions of Level 2. As described before, the numerous neutral connections between the limbic system and the neo-cortex ensure that there is a constant interflow between sentimental and rational activity. The neo-cortex will learn according to reward and punishment and a person has the sense of having some control over their activities. The capacity for abstraction means that some of the control of Level 2 mind takes on an independent existence from sensory input. Images and ideas can be juggled in illogical patterns which may only surface in dreams.

Atimanasa Kosa (Level 3): This is the first of the three levels of the Causal Mind. P. R. Sarkar says the distinction between the unit causal mind and the Cosmic Causal Mind is merely a theoretical proposition. He writes that; "There is no separate existence of the unit causal mind from the Cosmic Causal Mind. In case the crude and subtle portions of the unit mind suspend their work by the process of Sadhana (spiritual practices) or otherwise, the causal portion of the unit mind will

not be able to maintain its separate identity; only the seeds of past actions will remain just to differentiate the microcosm from the Macrocosm. By a process of correct Sadhana, the Sadhaka (spiritual practitioner) will feel that there is one causal mind in the universe." ("Idea and Ideology", 5th Ed. 1978 p. 42).

While Eastern psychology has long recognised the existence of the causal mind, Western psychology has only recently begun a study of it under the guise of transpersonal psychology. Perhaps this is because there is no material part of the human brain which mediates transpersonal activities. The crude and subtle levels of the human mind both interact with the physical body, mediated by the brain stem, the limbic system or the neo-cortex. However the causal mind exists independent of matter. Whereas much of the content of the crude and subtle unit minds is determined by the physical human body, the content of the unit causal mind is transpersonally or Cosmicly determined and not individually determined.

<table>
<tr><th colspan="2">THE MACROCOSM</th><th colspan="2">THE MICROCOSM</th></tr>
<tr><td>Satyaloka
(Cosmic Aham & Mahat)</td><td>Subjective Cosmic Mind</td><td colspan="2">Subjective Unit Mind
(Unit Aham and Mahat)</td></tr>
<tr><td>Taparloka</td><td></td><td>Hiranyamaya Kosa
(Level 5)</td><td rowspan="3">Causal Unit Mind
Bliss
Devotion
Intuition
Subtle Human Values</td></tr>
<tr><td>Janarloka</td><td>Subliminal Mind</td><td>Vijinanamaya Kosa
(Level 4)</td></tr>
<tr><td>Maharloka</td><td>Supra-mental Mind</td><td>Atimanasa Kosa
(Level 3)</td></tr>
<tr><td>Svarloka</td><td>Subtle Cosmic Mind</td><td>Manomaya Kosa
(Level 2)</td><td>Subtle Mind</td></tr>
<tr><td>Bhuvarloka</td><td rowspan="2">Crude Cosmic Mind</td><td>Kamamaya Kosa
(Level 1)</td><td>Crude or Sensory Mind</td></tr>
<tr><td>Bhuloka</td><td colspan="2">Physical Body and the Physical Sensory and Motor Organs</td></tr>
<tr><td colspan="2">Physical Universe</td><td colspan="2"></td></tr>
</table>

Fig. 31. The Five Levels of the Human Mind and their Correspondence with the Layers of the Cosmic Mind

The Atimansa Kosa is responsible for subtle human values, intuition, creativity, insight, precognitive and other experiences which defy the traditional barriers of space, time and individuality. Because each person is connected to every other person or organism, it is possible at this level to intuit the minds of others. It is also possible to perceive the connections between the opposite and contradictory forces within nature. Psychologists trying to trace the cause and effect of Level 2 behaviour will end up at the Atimansa Kosa. But it is not possible for them to have a direct appreciation of this level without being able to control and silence the lower two levels of mind.

Vijinanamaya Kosa (Level 4) (pronounced Vee-gyana-maya): This is the highest level of mind at which the sense of individual or separate existence persists. This is the level of archetypes—the level at which pure Attraction of the Great differentiates into the three psycho-spiritual components of human Dharma—Vistara, Rasa and Seva. Many of the divine human qualities such as mercy, gentleness, magnanimity and patience arise from this layer. The most important capacity of Level 4 is the power of discrimination or Viveka, the ability to distinguish that which is helpful for progress along the path of Prati-saincara from that which is not. This power can only be developed where a person has simultaneously acquired some detachment or Vaeragya from the lower levels of mind.

Hiranyamaya Kosa (Level 5): At this level there is no longer any sense of individual existence. There is no limiting or disturbing idea; there is simply the One. Hiranya means golden because this Kosa is characterised by a brilliant golden radiance. There is only a thin veil separating the person from Pure Consciousness or Jivatman.

During the waking state each level of the mind is active, although the individual will normally only be aware of Levels 1 and 2. When the crude mind or Level 1 becomes inactive due to fatigue, that is, when the sensory and motor organs are turned off, this condition is known as sleep. If the Level 2 mind remains active during sleep then ideas, symbols, images and feelings will continue to circulate. This is the condition of dreaming. However if Level 2 mind also becomes inactive due to fatigue, the person enjoys deep sleep. See Figure 32.

Eastern psychology defines death as the long sleep of the

causal mind. When the causal mind ceases to function, the physical body is cut adrift, and not possessing any internal vitality of its own, the crude physical body is said to die. However just as a person can awaken from deep sleep and can pass into and out of the dream condition, so too a person can pass into and out of the long sleep of the causal mind. This is the phenomenon of reincarnation. And just as after sleep, a person awakes refreshed, so after death the person awakes with an entirely new physical body. This occurs at the moment of conception. According to Eastern psychology, the loss of one's body and the acquisition of another has no greater significance than taking a change of clothes. The widespread but misguided identification with the physical body makes death such a feared experience. It is well known however, that dying persons enjoy death as a transcending and tranquil experience if they have had time to prepare for it by dis-identifying with their bodies.

Between life-times, a person remains as a vibration in the Cosmic Causal Mind. This is perhaps the morphogenetic field which biologist Sheldrake refers to as guiding embryonic development and later on mental development.

Mind as Hologram

It is frequently said that most human beings use only 1% of their brains; to which it could be replied that most human beings appear to need only 1% of their brains. For example hydrocephalics, once they have had corrective surgery, are able to lead apparently normal lives. Yet recent advances in brain

KOSA	WAKE	DREAM	DEEP SLEEP	DEATH	SAMADHI
Causal (3. 4 & 5)	Active	Active	Active	Inactive	Merged in Macrocosm
Subtle (2)	Active	Active	Inactive	Inactive	Merged in Macrocosm
Crude (1)	Active	Inactive	Inactive	Inactive	Merged in Macrocosm

Fig. 32. Mind Activity and Different States of Consciousness

scan technology have revealed that cured hydrocephalics possess as little as 5% of the normal amount of neural brain tissue. How do they possibly function normally? Experiments with monkeys provide another puzzle. When a monkey is taught a trick, the memory of that trick does not appear to reside in any one part of the cortex, the memory part of the brain. No matter which part of the cortex is destroyed, the monkey can still remember its trick. That is, the learned trick appears to be diffused through the cortex and not encapsulated within a small part of it as a set of neuron switches or connections. It is experiments such as these that have led psychologists to the hologram model of the mind.

A hologram is a special type of photographic plate that records three dimensional images using laser technology. The image is not apparent to the eye unless illuminated with a special light, but once illuminated the observer has the ability to peer around the image within certain limits. The remarkable aspect of a holographic plate is that every part of the plate contains the whole image. If the plate is broken in half, or if only a small piece is cut off one corner, then the image can still be reproduced from the remaining smaller pieces. Every part contains the whole. The intensity of the image is reduced with smaller pieces of plate but the image is there nevertheless.

The brain may be thought of both as a holographic plate and as a transducer, that is, a device for converting variations of one quantity, nerve impulses, into variations of another, memory vibrations. Memory, in particular long term memory, is stored by the brain not as neuron connections but as mental vibrations or holographic frequencies. However short term memory appears to be predominantly physical. In its capacity as a transducer, the brain accepts nerve impulses emanating from the sense organs and converts them into holographic frequencies, what we have previously called standing mental waves. There is no one to one correspondence between a particular memory and a part of the brain. Each part of the brain is linked with the entire memory structure just as each part of a holographic plate contains the entire image.

The transduction of nerve impulses into memory vibrations involves the conversion of something bounded by space and time into something not bounded by space and time in the traditional

sense. The problem here is that the word frequency or vibration necessarily implies movement in space and time. Some writers have made the mistake of assuming that the mental world is totally aspatial and atemporal, but this would imply a total lack of structure, that is, the realm of Pure Consciousness. Mind is clearly subject to some notions of space and time which as yet we do not understand.

The question arises as to the differences between the unit minds and the Cosmic Mind. They are both made of the same mental stuff or Citta, and they both have the same fundamental structures. Of course the unit mind evolves out of matter whereas the Cosmic Mind devolves out of Consciousness, but in what way are their capacities different?

Sarkar enumerates four differences between the unit and Cosmic minds. Firstly, the imagination of the unit mind cannot produce physical realities. The unit mind can manipulate matter according to its desires but it does not create the Five Fundamental Factors. The Cosmic Mind has the imaginative capacity to create 5FF; that is, to create realities for the unit mind. Secondly, the material world appears to the unit mind as an external reality and as multitudinous. However to the Cosmic Mind the material world is internal, and a collective unity. Thirdly, the unit mind requires physical sense and motor organs in order to satisfy its desires. The Cosmic Mind requires no sense or motor organs since all is internal to it. Finally, the unit mind has many desires—it is multi-purposive—but can do only one thing at a time or enjoy only one object at a time—it is uni-lateral. By contrast the Cosmic Mind is uni-purposive and multi-lateral. The Cosmic Mind can perform any number of activities at once and through its multilateral capacity the entire universe is maintained. But the Cosmic Mind has only one desire—that everything created will once again merge with Cosmic Consciousness.

HUMAN PSYCHOLOGY

The human mind does not appear pre-formed at the moment of conception. Rather its levels unfold according to a definite developmental sequence. And as each level appears, it is filled with the memories, skills and input and output fascilities appropriate to it. From previous chapters it should now be apparent that the unit mind does not evolve 'de novo' into a mental desert. The unit mind evolves out of matter but it evolves within the Cosmic Mind; that is, the unit mind evolves within the environment of the Cosmic Mind and copies its structures. To the unit mind, the Cosmic Mind appears as given or pre-formed.

Developmental Psychology

When studying the human mind, Western psychologists distinguish two aspects of its development; structural development and self development. Structural development is an objective description of the unfolding mind and the way each level is filled out with its furniture and fittings. On the other hand, self development is a subjective description of the way the world appears to the human mind at each stage in its development. The two aspects of development are obviously related but are sufficiently distinct to warrant separate discussion. The author is endebted to the writings of Ken Wilbur for the following summaries of structural and self development. Wilbur has done pioneering work in his integration of Eastern and Western psychology and many of his insights are included in this section. His terminology has been changed in places for ease of presentation. The author has also attempted to integrate further aspects of Eastern psychology as presented by P. R. Sarkar, especially in the section on the subjective mind.

Structural development of the mind. Structural development means the sequential unfolding of the five Kosas beginning with Level 1 and concluding with Level 5. This development or unfolding is remarkably consistent between individuals. For example, the rational mind generally emerges around the age of 12. See Figure 33.

Western psychology recognises a number of sub-levels within the broader categories of Level 1 and Level 2. The sequential appearance of these levels is given in Figure 33; along with the approximate time of their emergence. The sensory and emotional/sentimental minds have previously been discussed. The image mind is the crudest layer of Level 2, its only capacity being to construct literal images of what it has experienced through the senses. The conceptual/symbolic mind is able to take the first step towards abstraction by recognising sets of similar objects, but it cannot perform any mathematical manipulations. In its social relations this level of mind recognises differences between people but cannot attribute any social role to them. The rule/role mind is able to perform mathematical manipulations according to fixed rules, and it is able to recognise the formal social roles played by other people and adopt social roles for itself.

The rational mind has a high degree of abstraction and imagination. It not only thinks but thinks about thinking. It can imagine the non-literal and non-obvious. Social relationships become something to be contructed and manipulated. The meta-physical mind attempts to stand apart from a body of knowledge and establish links with other bodies of knowledge.

LAYER OF MIND		TIME OF EMERGENCE	PIAGET'S EQUIVALENT STAGE
KOSA	WESTERN NAME		
3	Supra-mental	?	
2/3	Meta-physical	21 years ?	
2	Rational	11-15 years	Formal Operational
2	Rule/Role	6-8 years	Operational Thinking
2	Conceptual/Symbolic	1-2 years	Pre-operational Thinking
2	Image Mind	6-12 months	
1/2	Emotional/Sentimental	1-6 months	
1	Sensory/Motor	pre-natal to 3 months	

Fig. 33. Structural Unfolding of the Human Mind

It is the highest integrating capacity of Level 2 mind and is the intermediate step to Level 3 or the transpersonal mind.

The ages given for the emergence of any level are an average for the human species, the data being collected from psychology tests. The time of emergence for the meta-physical and supramental minds are questioned because there is no data to go on. As a collective species, human beings have evolved to the level of rational mind and statistical data can therefore be collected. However some individuals go beyond this level, but in a manner of speaking they are on their own. There is little Western research to describe development beyond the rational mind. It is a reasonable expectation however, that as the species evolves the time scale for mental development will be compressed to allow for the unfoldment of higher levels at an earlier age.

It is most important to remember that the lower levels of mind continue to operate even after the appearance of higher levels. In fact not only do they continue to operate but they become increasingly refined and sophisticated. For example, as a person grows older, their sensory-motor skills become more dextrous, their emotional expressions become more sensitive, their memory recall improves and their logical reasoning becomes more powerful. Thus the various levels of mind should be thought of as an evolutionary tree in which all the branches continue to grow after they first appear. Figure 33 gives the time of the first emergence of each branch as discovered by developmental psychologists.

However this traditional account of psychological development may be misleading in its description of emotional development. There is no doubt that emotional capacities arise in animals and human beings before any logical capacities and to this extent the former can justifiably be located in a lower level of mind. Eastern philosophy refers to many subtle feelings such as longing for the Great, bliss and love and regards them as characteristic of the highest stages of human development, but these are not emotions in the Western sense of the term. From a different perspective, feminist theory objects to the elevation of the logical above the emotional. Emotion is typically associated with women and logic with men, and this is another example of patriarchal oppression promoted under the

guise of objective science. As feminists point out, nearly all developmental research to date has been carried out by men on male subjects. As female psychologists enter into research, it is becoming apparent that different developmental patterns apply to females. For example, see the work of Carol Gilligan in her book "In a Different Voice" (published by Harvard University Press 1982).

There are two problems in the Western study of emotion. Firstly, it has tended to lump all emotions, feelings and sentiments, whether crude animal emotion or subtle spiritual feelings, into the same lower category. Secondly, most of the research has been done by males on males, whereas females appear to have different emotional expression and development. There is great need for further research in this area.

Development of the self. According to some schools of transpersonal psychology, the self has three attributes—it is an independent organising principle which integrates and coordinates the activities of all the levels of mind; it is the locus of the 'I feeling'; and it is the locus of will power by which a person advances or regresses. However there is no comparable concept of self in Eastern philosophy. The 'I feeling' is recognised in Eastern philosophy as having three components—the pure 'I am' or 'I exist' feeling; the 'I am doing' feeling which is the ego and the origin of will power; and the 'I have done' feeling which is the enjoyment of doership. The 'I am' feeling or Mahattattva and the 'I am doing' feeling or Ahamtattva are not structural parts of the mind; they are the subjective portions of the mind and in some sense theoretical. The 'I have done' feeling or Cittatattva is the objective part of the mind. These three parts of the mind are discussed more fully in the following section.

According to some transpersonalists the self develops in a definite sequence concurrent with the unfolding of the structural levels. When only Level 1 has unfolded, the self necessarily identifies with it completely. Here matter dominates and there is insignificant expression of ego or existential awareness. When the ineffectual self attempts to integrate its experience at this level, the result is an undifferentiated, confused fusion with matter. Although it scarcely deserves the title, Wilbur calls this attempt at integrating a world view the "archaic world

view". It is also known as the "primary matrix" in Western psychology.

When the image mind unfolds at about 6-12 months, the self must disengage itself from complete identification with Level 1 and attempt to integrate the two levels. Necessarily the self must experience the world in a different way from before and the resulting world view is described by Wilbur as magical. "Magic", says Wilbur, "is simply the way the world looks when you have images and symbols, not rules, not formal operations, not vision." Because there is no apparent connection between the many images, they appear to change as if by magic. Magic is the world view that the self contrives in the attempt to integrate its experiences; the world appears as both wondrous and fearful. This is the way the world appears to very young children.

The world view constructed by the self at the next two levels (conceptual/symbolic and rule/role) is mythological. Here the self recognises symbols, social roles and their interelationships, and constructs a mythology whose primary function is to clarify the self's role in its ever changing world. Mythology is an attempt to create meaning and belonging. The mythological world view is full of fantasy and impossibility but there

KOSA: LEVEL OF MIND	LEVEL WITH WHICH SELF IDENTIFIES	WORLD VIEW (Wilbur)	SELF NEEDS (Maslow)	MORAL OUTLOOK	"I" FEELING
3	Supra-mental	Archetypal Trans-personal	Self-transcendence	Collective Welfare	Aham Transcendence
2/3	Meta-physical	Integration of the Logical & Ilogical	Self-actualisation	Rights and Responsibilities	
2	Logical	Scientific Cause & Effect	Self-esteem	Individual Rights (Kohlberg)	Mahat weak
2	Rule/Role	Mythical	Belonging	Law and Order Authority Approval	Aham Increasingly Dominant
2	Conceptual/ Symbolic				
2	Image	Magical	Safety	Naive Hedonism Reward/Punishment	
1/2	Emotional Sensory	Archaic	Physiological	None	Mahat weak Aham weak

Fig. 34. The Development of the Self in Western Psychology.

Developmental patterns in women appear to be different, especially moral outlook and self

are very strict rules of morality governing social relationships, as for instance between the mortals and the gods in Greek mythology. Religious theology can also fill the role of myth.

When the logical mind unfolds at approximately 11 to 15, the self searches for an integrated world view that is consistent with all of its sensory experience. Historically speaking this world view emerged towards the end of the dark ages when a sense of individual potential and scientific outlook began to emerge. It peaked in the 19th century and we are witnessing its death throes today.

While many people today have a world view integrated at the level of the meta-physical mind, this outlook has not yet permeated to the collective mind. Here the self attaches equal importance to individual and collective welfare and experiences the need to explore the full potential of the human mind.

Finally the self enters the Causal Mind or its lowest level, the supra-mental mind. Here the greatest need is to overcome one's sense of individual, separate existence and a moral outlook of service and sacrifice for the collective welfare is developed accordingly.

In order to enter a higher level of mind the self must dis-identify with its current layer. At the lower levels, dis-identification is automatic but at the higher levels it involves pain and struggle. This is particularly true of the transition from Level 2 to Level 3 in which the self must break its attachment to the individual self and identify with the collective self. Such is the dilemma facing most people today. Only Attraction of the Great provides the inspiration to persist in this struggle.

The failure of the self to integrate higher levels of mind as they unfold results in mental illnesses of varying degrees of severity. Three conditions will be referred to here. For healthy development of the self each developmental stage must be properly expressed before moving on to the next. A house cannot be built on faulty foundations and likewise a higher level of mind cannot be expressed if the lower levels are faulty. Where the self attempts to move into a higher level without being fully reconciled to its current layer, the phenomenon of repression arises. Secondly, mental illness may arise where the self fails to integrate and coordinate all the lower levels of mind with its current level. For instance the condition of Schizo-

phrenia occurs where the self cannot integrate the emotional/ sentimental level of mind with the intellectual levels. Finally there is the condition of arrested development, where the self refuses to migrate to a higher level of mind. Obviously arrested development cannot occur until the higher level has unfolded and made its beckoning presence felt. But once this has occured, the self may try to remain stationary by repressing the Attraction of the Great. Repression of Attraction of the Great is the ultimate cause of all mental pathology. For example, today's capitalist society refuses to move from Level 2 and the morality of individual rights to Level 3 and the morality of collective welfare. The pursuit of unrestricted individualism which deliberately ingnores the collective welfare is a pathological condition of the collective mind that is destroying our planet.

The Subjective Mind

Eastern philosophy does not recognise any concept of the self as outlined is the previous section and simply explains mental development in terms of the gradual expansion of the mind. In Eastern philosophy, the mind is the self, though the mind contains different levels or Kosas and different aspects of the mind fulfil different functions. Of the three components of the self described by Western psychology, the independent organising principle which integrates and coordinates the activities of all the levels of the mind is the Jivatman, the unit consciousness or unit witnessing entity; the locus of will power is the Aham or 'done I' feeling; while the 'I feeling', in its different forms, resides in both the subjective and objective human mind. In this section we examine the development of Mahat, the 'I am' feeling, and the Aham, the 'I do' feeling, which combined form the subjective part of the human mind. The objective part of the human mind or Citta, which includes the five Kosas or mind Levels 1-5, is the 'I have done' feeling or the enjoyment of doership.

By not subscribing to the concept of self as proposed by Western psychology, Eastern philosophy presents a more integrated picture of the mind which clearly explains subtle mental functions. While Western psychology has made an indepth

study of Level 2 mind, it has little knowledge of Levels 3-5 or of the role and significance of the subjective mind.

It is important to note that while the levels of mind are structural demarcations, the Aham and Mahat are philosophical concepts used to explain the different aspects of 'I' feeling. The relationship between the two becomes clear by examining the evolution and expansion of the human mind as it moves along the path of Prati-saincara. The Citta merges into the Aham, the Aham into the Mahat and the Mahat into unit consciousness as the human mind expands and eventually merges into Cosmic Consciousness. This idea is explained more fully in this section.

The objective mind and the two parts of the subjective mind (Aham and Mahat) form an important trio in Brahmacakra philosophy. The objective mind takes as its object some sensory impression or memory. The objective mind actually moulds itself into the vibratory form of the imagined object. Then the Aham takes the objective mind as its object and 'sees' the various impressions or memories within it. Without the Aham, a person or any living organism has no capacity to see or act of its own accord. The Aham controls the sense and motor organs; it performs actions and also experiences the resultant pleasure or pain. But the Aham has no attribute of self-awareness. This particular quality belongs to the Mahat. Without the Mahat, the Aham cannot perform any action or experience any pleasure or pain, since there is no 'I' to exert will-power. The Mahat however, performs no action; its only connection with the objective mind is through the Aham, just as the only connection between the Aham and the external world is through the objective mind. Thus no action and no perception of any kind is possible without the coordination of objective mind, Aham and Mahat.

As the human mind evolves it increases volume and mass; that is, its capacity to perform functions increases and it becomes more subtle. This occurs as the Citta develops into the Aham and the Aham into the Mahat. See Figure 35.

Since the structural levels of mind come within Citta, as the Citta develops into the Aham, the subtle mind becomes more active, and as Aham develops into Mahat, the causal mind becomes more active. Thus the structural levels expand to

encompass the subjective mind as the mind gradually develops more of its inherent potential.

At this point, a note of caution; Aham is usually translated into English as ego, but we must remember that the term ego is used in a variety of ways. Aham is not the same thing as Freud's Ego or Superego, although of course they are related. Ego is also frequently used in the derogatory sense of self-centredness. It is hoped that the meaning of ego as used in this book will be clear from the context.

The subjective portions of the mind become more important at the higher levels and the objective portions become correspondingly less important. At Level 1 both the Aham and Mahat are poorly expressed so this level is predominantly objective. There is miniscule 'I exist' or 'I do' feeling, hence there is no ego sense or will-power. There is the condition of most plant and animal consciousness, known as the primary matrix or archaic world view. In such organisms, due to lack of Aham, all action and perception comes under the umbrella of the Cosmic Mind and Cosmic Will.

During the ascent from Level 1 to Level 2, the Aham/ego increases in scope and gives rise to the characteristic of will power. As Level 3 mind unfolds the Mahat becomes more clearly expressed and Aham begins to decline. All animals and plants have Mahat but it is only in human beings that it develops to the point of self-awareness. The increase in Mahat and the

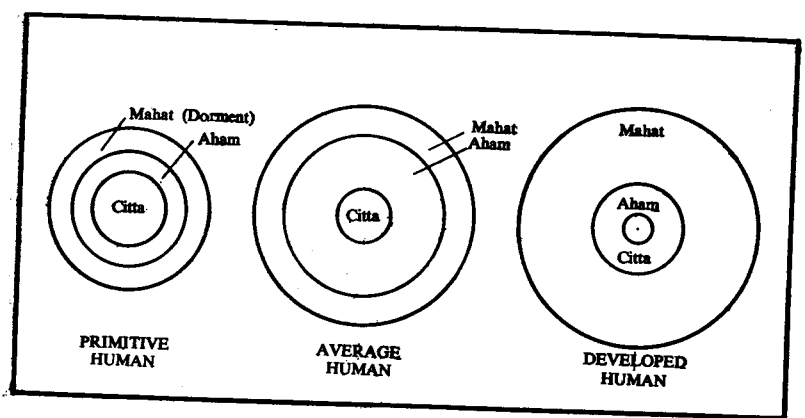

Fig. 35. The Evolution of the Human Mind.

decrease in Aham continue up to Level 5 mind were the objective portion and the Aham are both negligible. Nevertheless some small degree of objective mind and Aham must remain otherwise even the very subtle 'I exist' feeling at this level would not be experienced.

Figure 36 summarises the relative scopes of objective mind, Aham and Mahat at each level of human mind. Since there are sub-levels within each major level, there is more of a smooth transition than suggested by the diagram.

But there is still one more question which we must ask. When the human mind unfolds through the various levels, what is meant by the Mahat and Aham increasing or decreasing in scope? P. R. Sarkar uses a very specific image; he says that the objective mind "merges" into the subjective mind or that the objective mind is "absorbed by" the subjective mind. In the transition from Level 1 to Level 2 part of the objective mind is absorbed by the Aham and hence the Aham increases in scope. In the transition from Level 2 to Level 3, part of the Aham is absorbed by the Mahat and hence the Aham decreases in scope and the Mahat increases in scope. Now we must ask

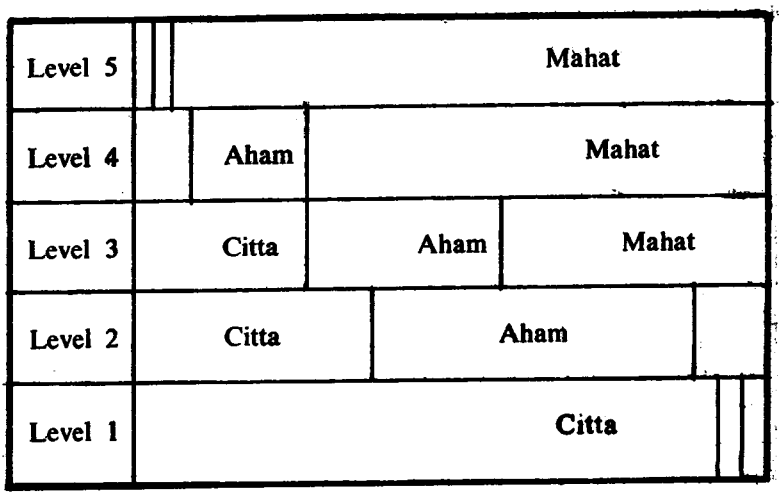

Fig. 36. The Structure of Each Level of the Unit Mind

ourselves what is meant by "merge" and "absorb" in this context?

As an analogy, we may consider the development of computer technology. A computer has two basic parts—the hardware (electrical wiring, keyboard etc.) and the software (programs, data bank etc.). Hardware may be taken as analagous to the human body and software as analagous to the human mind. We may distinquish two types of software—those programs built into the computer when it is manufactured and whose purpose is to manage the internal functioning of the computer, present the display on the screen and so on; and those programs which are either typed into the computer by the user or inserted via a disc drive. For the purposes of this analogy we may refer to the first type of program as the Operating System and the second as the Inserted Program. Generally speaking the user has no interest in the Operating System and indeed has no awareness of it. The user is interested only in the Inserted Program because that is the one which will perform the desired calculations or whatever. Without the Operating System however, the Inserted Program will not function, and it is only when the Operating System breaks down that the user is aware of its essential role behind the scenes. It should now be obvious that the Inserted Program is analagous to the objective mind and the Operating System is analagous to the Aham. The Operating System, like the Aham, is not seen, but without it nothing happens.

The first computers had very simple Operating Systems and to achieve any calculations the inserted program had to be precise and voluminous. They were written in machine code, the simplest and least intelligent of computer languages. As computers evolved the Operating Systems became more elaborate and could accept instructions in coded English such as Fortran and Basic. Scientists are now working on computers whose Operating Systems are so complex that they will accept instructions in grammatical English. The point to note here is that as the Operating Systems became more complex, the Inserted Program required to achieve a given computation became much simpler. In other words during the course of the development of the computer, what once belonged in the Inserted Program was

absorbed into the Operating System; the Operating System increased in scope.

The user of course has no idea what the Operating System consists of; after all, the measure of a good Operating System is the degree of its invisibility. The only hint that the user has of the scope or complexity of the Operating System is the apparent intelligence of the computer. The greater the scope of the Operating System, obviously the greater the intelligence of the computer.

There is an obvious parallel between the development of the Aham in the transition from Level 1 to Level 2 and the development of computer Operating Systems. Level 1 mind is like an early generation computer; it has a large objective mind (Inserted Program) and a small subjective mind/Aham (Operating System). Level 2 mind is like a contemporary generation computer; it has a small objective mind (Inserted Program) and a large subjective mind/Aham (Operating System). Concommitant with the increase in scope of Aham (Operating System) there is an increase in intellect. Thus we can now understand what Sarkar means when he says, "Cittad aham prabalye buddhih—When Aham is dominant over Citta (objective mind), intellect evolves."

There is another significant comparison. The growth of computer Operating Systems was possible primarily because of the vastly increased memory capacity of modern micro-chips. More information and more instructions could be crammed into a given volume and computational speeds increased. In a similar way we may imagine that the growth of the Aham and thus of intellect is due to the unfolding of vastly increased amounts of mental stuff at Level 2. Perhaps improved programming techniques, that is education, also contributed to the growth of Aham.

While the computer analogy is extremely good for understanding the merging of the objective mind into the Aham, it becomes rather tenuous for the merging of the Aham into the Mahat. It is as if the computer develops a sense of its own existence and acquires a capacity for aesthetic appreciation. It is not that the old Operating System (Aham) becomes less intelligent with the emergence of Mahat, but that it becomes redundant because the new Operating System completely outshines

it. The old Operating System (Aham) produced an intelligence which was strictly logical, analytic and bound by space, time and person/user. As more mind stuff unfolds (Levels 3, 4 and 5), a qualitatively different kind of Operating System emerges, namely the Mahat. The Mahat operates intuitively and absorbs within it more and more of the functions previously performed by the Aham. The Mahat still remains subjective and invisible; indeed it is even more invisible than the old Operating System because it is characterised by intuition rather than intellect. The Mahat is trans-logical, trans-personal and trans-egoic. Therefore Sarkar says, "Ahamtattvat mahad prabalye bodhin— When Mahat is dominant over Aham, intuition evolves".

From the above analogy it would appear that Aham and Mahat are much more than just 'I feeling'. They are complex mental phenomena with a wide range of controlling and coordinating functions. But the individual has no experience of their internal operations. We may infer that the controlling and coordinating functions of the Aham must exist, but the only direct experience we have of them is the 'I do' or will power feeling.

To summarise this section so far—during human development the objective mind becomes less in scope due to absorption into Aham; the Aham at first increases in scope but then decreases in scope and finally the Mahat increases in scope as it absorbes the Aham. The Aham/ego is therefore a temporary phenomenon. Because of its temporary nature and because it must be transcended in order to arrive at higher levels of mind, the Aham/ego is frequently dismissed as a nuisance obstacle which serves no positive or useful purpose. Meher Baba however, put the Aham/ego in its proper perspective. "It would be a mistake to imagine that, as the ego arises only to vanish, it fulfils no need in the long journey of the soul. Though the ego is not meant to be permanent since it can be transcended and outgrown through spiritual endeavour, the phase of ego-formation must nevertheless be looked upon as necessary for the time being." Without the Aham/ego, the human being would be overwhelmed with the contradictory and incomprehensible experiences of the universe. The capacity of the Aham to select and evaluate experiences logically is the first step in the liberation of life from the domination of Level 1 instincts and compulsions. Meher Baba says further, "The formation of the

ego serves the purpose of giving a certain amount of stability to conscious processes, and secures a working equilibrium which makes for organised life." (Meher Baba as quoted by Ken Wilbur, "Eye to Eye" p. 213).

The almost complete absorption of objective mind and Aham within Mahat at Level 5 is not the final point of human development. The pinnacle of Prati-saincara and its culmination occurs when the human Mahat is dissolved within Pure Consciousness. This state is known as Nirvikalpa Samadhi, the stance of indeterminate absorption, objectlessness, non-duality, emancipation or Moksa. In Moksa there is no thought and no experience; the mind is completely dissolved into Supreme Subjectivity, and hence this Moksa must remain a mystery. Nevertheless P. R. Sarkar says ; "Abhavottara ananda pratyaya alambaniih vrttih tasya pramanam. The experience of bliss which follows Samadhi is proof of this state. It is the means of firm belief in Nirvikalpa Samadhi."

It is through the practice of Intuitional Science that the Citta is merged into the Aham, the Aham into the Mahat and the Mahat into the Jivatman. The five levels of mind also expand as the mass and volume of the Citta expands and merges into the subjective mind. Thus a highly evolved spiritual aspirant or Sadhaka has a predominance of Mahat and the Hiranyamaya Kosa or Level 5 is completely absorbed is bliss. In such a highly developed state the objective mind has been completely transformed into subjective mind. This process of transformation is the speciality of Intuitional Science, which takes the human mind as its laboratory.

The Pre-trans Fallacy

During Prati-saincara, mind evolves out of matter and Consciousness evolves out of mind. Strictly speaking, Prati-saincara begins with the first appearance of mind and culminates with the absorbtion of mind into Consciousness. First the crude (Level 1) mind evolves, then the subtle (Level 2) mind and finally the three layers of the causal mind. For the purposes of this discussion, Levels 3, 4 and 5 will be treated as a single level, the causal mind. Crude mind evolved during animal evolution and the subtle mind during human evolution. Further evolution

beyond the subtle into the causal has occured on an individual basis but not yet collectively.

It is said that "ontogeny repeats phylogeny". When applied to human beings this means that during a person's lifetime, their physical and mental growth is a condensed recapitulation of the entirety of animal evolution from the first unicells to the present day humans. The human embryo for instance passes through stages reminiscent of the fishes, reptiles and non-primate mammals before it becomes recognizably human. The human embryo evolves at the breath-taking rate of 10 million years per day! Similarly a person's psychological development recapitulates the evolution of mind; first the crude mind unfolds, then the subtle and finally the causal. The progression from crude to subtle to causal represents normal, healthy human development, whereas any backward movement is termed regression.

Now the subtle mind has particular significance in this progression because it is the central or pivotal stage, and because it represents the highest collective achievement of the human race thus far. The subtle mind is characterised by ego, by logic and by a sense of personal existence. We can therefore define the other two levels of mind with reference to the subtle. That is, the crude mind is pre-egoic, pre-logical and pre-personal. The causal mind is trans-egoic, trans-logical and trans-personal. (Here trans is used in the sense of transcending.) The three levels of mind are three levels of consciousness and so for any characteristic of consciousness, there is a pre-subtle condition, the current normal subtle condition and the post-subtle condition which transcends the subtle.

The two great achievements of Eastern psychology have been to clearly recognise the three stages of human mental development and to provide psychological techniques to foster the progression from one to the next. The greatest weakness of Western psychology has been its failure to recognise the three stages of human development or their culmination in union with Consciousness. As a consequence, Western psychological techniques have frequently been detrimental to human development. As Wilbur has so succinctly shown, the problem for Western psychology has been its confusion of the pre-personal and trans-personal stages of development; hence the pre-trans-fallacy. Since development goes from the pre-personal to the personal to

the trans-personal and since the first and last are in some sense both non-personal, then to the naive and inexperienced eye they appear the same phenomenon. Similarly the pre-egoic and the trans-egoic can both be confused as non-egoic and the pre- and trans-logical can both be confused as non-logical.

The pre-trans-fallacy is not confined to psychology—it has infected and continues to infect much of Western philosophy, sociology, political ideology and so on. Only a thin silver of the Western tradition has escaped the pre-trans-fallacy, due in most part to a significant Eastern influence. Aldous Huxley called it "The Perennial Philosophy", and we shall return to it in the final chapter.

The pre-trans-fallacy takes two forms. In the first, the trans-personal levels of consciousness are confused with primal instincts and are reduced to pre-personal levels of consciousness; in the second, the pre-personal levels of consciousness are taken in some way to be mystical and are thus elevated to trans-level status. The two forms of the pre-trans-fallacy actually inspire two quite different outlooks on the world which we will refer to as the 'earthy' world view and the 'etherial' world view. (Here etherial is used in a metaphorical way and has no connection with the Fundamental Factor.) Figure 37 summarises these two world views. Note that in the earthy world view, the beginning and end of human development both lie in the mundane world of matter; whereas in the etherial world view, human development begins and ends in the rarefied world of archetypes and spirit. Note also that both world views consider the subtle or personal mind as representing a departure from the original human condition which was paradise, and that for further development humans must attempt to regain paradise. But paradise for the two world views is something quite different, and indeed the paradise of the one is the hell or illusion of the other.

The two world views can be illustrated with quite simple examples. Marxist dialectical materialism is a perfect example of the earthy world view. The origin of the human mind is correctly perceived as being derived from the mundane material world. The personal mind is also correctly perceived as having evolved out of the pre-personal mind, but for Marxists the development of ego or sense of personal separateness amounts to a pathological condition known as alienation. The further

development or fulfilment of human beings, they say, is dependent upon a return to a non-personal condition which involves an intimacy between mind and matter. This is not the same as the original pre-personal condition since the former was unconscious and uninformed whereas the latter is conscious and rationally informed. Nevertheless there is a return to another kind of unity with matter, just as the advanced communist state is in some sense a return to the benefits of primitive communism. A more complete analysis of Marxism will be pursued in later chapters, but this is sufficient to elucidate the essential features of the earthy world view and its inherent fallacy.

Christianity is a perfect example of the etherial world view and its associated fallacy. Here the present human condition is regarded as a fallen state, a descent from the trans-personal Garden of Eden. This descent came about as a result of material temptations and the redemption of human beings is dependent upon them tracing a path back to the Garden of Eden. Here the Garden of Eden is a metaphor for the return of humans to Spirit or Godhood.

The arrows in Figure 37 refer to movement from one level of consciousness to another. Upward arrows describe progressive and therefore healthy development, whereas downward arrows describe regression which leads to a pathological condition. Now the tricky aspect of comparing the two world-views

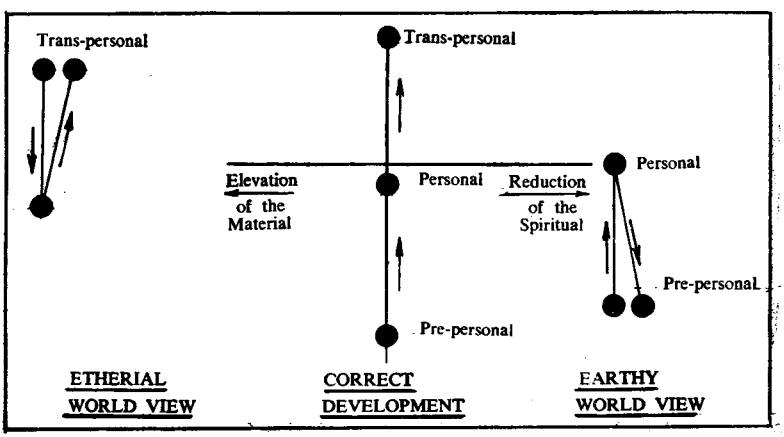

Fig. 37. Two Forms of the Pre-trans-fallacy

is that they are both half-right and both half-wrong. The earthy world view is correct in maintaining that humans possess a pre-personal, irrational and sub-conscious component which preceeded the appearance of the personal and rational. It is also correct in seeing the development of the latter as progressive. However the earthy world view is incorrect in denying the validity of spiritual experience and in advocating a return to unity with matter as progressive. The etherial world view is correct in maintaining that there is a spiritual and trans-personal component to human development and that the endeavour to transcend the personal/egoic/logical mind is progressive. But it is wrong in maintaining that the ego is a degeneration from the trans-personal realms and that it is the worst kind of evil. In each world view lurks great danger, because each denies the validity of one realm of human existence and is therefore forced to introduce a regressive component into its account of human development.

Christianity denies the validity or relevance of the physical realm and is forced to interpret the evolution of the human ego as a regression. As a result, the techniques of redemption offered by Christianity, to help humans move from the personal to the trans-personal, are sabotaged by their denial of the ego as a legitimate stage of evolution beyond the pre-personal. By contrast, the Marxist perception of paradise as union of mind with matter necessarily forces them to impose regressive techniques of social development. They are also obliged to explain away all trans-personal phenomena as peculiar manifestations of matter.

The psychological theories of Jung and Freud represent further examples of the etherial and earthy world views respectively. And because of their tremendous importance in shaping the Western schools of psychology, they deserve some attention.

For Jung there are two realms: the personal and the collective. While the collective realm may be thought of as higher than the personal in the sense that it is more encompassing, Jung made the mistake of combining all collective phenomena, whether pre-personal collective or trans-personal collective, into one higher realm. In the beginning the collective realm is unconscious and development of the personal mind is regarded as a regression. Further development of the human mind is

dependent upon returning to the collective realm by making its unconscious content conscious. It should be noted that Jungians recognise the material evolution of humans from animals, but they do not recognise the early pre-personal human mind as something cruder than today's personal mind. The sequence for Jungians is not pre-personal—personal—trans-personal, but trans-personal (unconscious)—personal—trans-personal (conscious). Here the pre-personal has been elevated to the trans-personal; all the archaic, magical and mythical contents of the pre-personal are elevated to mystical, archetypal, spiritual forms without any regard for their true developmental significance. The confusion has infected most of the Western trans-personal schools of psychology, the 'avant-garde' and human potential therapies.

Jung considered the collective realm to be populated with archetypes. We have already referred to archetypes in relation to the Subliminal Sphere or Janarloka in chapter three. An archetype refers to the first manifestations of form that emerge out of Consciousness in the early stages of Saincara. Archetypes therefore clearly belong to the causal or trans-personal mind, but upon them all subsequent creation is moulded. The content of the crude human mind (Level 1) cannot be said to be archetypal since it is derived entirely from sensory experience. The senses do not detect archetypes. Certainly human beings will have had a lot of shared sensory experience in their struggle to transcend matter, but collective experience is not by definition archetypal. Thus Jungians are incorrect in supposing that the personal mind regressed from transpersonal archetypes but they are correct in supposing that the future evolution of human beings will be towards transpersonal archetypes. In fact human evolution will be drawn by those archetypes, being manifestations of Attraction of the Great, as previously explained.

Since many Jungian archetypes in fact have no spiritual significance (at best they are a historical record of the primitive human mind), they may be red-herrings for the person seeking spiritual truth. In chasing the deeper meaning of the pre-personal archetypes, a person will be caught in an intriguing web of the past, rather than responding to the clarion call of the future.

The etherial world view and its fallacy can be detected in numerous sociological and anthropological theories. It lurks in

the vision of the noble savage (Rousseau), in the elevation of schizophrenia to mystical revelation (R. D. Laing) and in the narcissistic/back to nature life-styles (Roszak and many 'Aquarian Age' theorists). It inspired the Romantic poets and philosophers to take the bold step of elevating the mortal human to Godhood along with their petty faults, weaknesses and all.

The etherial world view not only presents dangers for the person wishing to move beyond the ego stage, but also for those persons suffering from ego weakness. Many forms of pre-personal fixation and obsession result from a person not having the ego-strength, will-power or self-respect to dis-identify with Level 1 mind. Introduced to an etherial world view therapy which perceives ego only as alienation from Spirit, such persons are encouraged to let go their ego and do what they feel. In reality all such therapy does is strengthen the grip of Level 1 mind by dismantling the very ego structures that should have been used to deal with the fixations.

Turning now to the earthy fallacy of Freud, we must first accept that he was half right. He correctly perceived that the human heritage from our animal past is the Level 1 mind—the pre-personal, pre-logical, pre-egoic mind which he called the id. He also correctly perceived the Level 2 mind (the personal/logical/egoic) as a higher development than the id. But Freud did not recognise the trans-personal mind and he was therefore forced to reduce all spiritual and mystical experience to blind impulses of the id. Higher states of Samadhi he attempted to explain away as a surrender of the ego to the id.

Freud's main concern was the relationship between the ego (Level 2) and the id (Level 1). In a bid to differentiate itself from the id, said Ferud, the emerging ego attempts to repress much of the lower level content. The part of the ego responsible for repression is the superego. The repressed content does not however quietly disappear—instead the attempt at repression creates a rebellion. The repressed content sends up disguised symbols and images to the ego which manifest as a pathological condition. Freudian therapy involves a reintegration of the ego with the id and a bringing into consciousness of both the repressed content and the repressing agent, the superago.

Freud achieved a great deal of notoriety because he claimed that most repression was focused on the libidinous urges of the

id and therefore most pathological conditions of the ego required a sexual interpretation. Today this biological/sexual/libidinous reductionism is considered quite inadequate and Freud's preoccupation with the sexual is understood as a reflection of his own mind or of the stultifying Viennese society in which he worked. In either case we should be careful to disentangle the deeper insights into the mind which Freud achieved from the sexual symbolism he used to explain them.

The fact that there was no repression prior to the emergence of the ego took on a special significance for the Freudians. It meant that the Level 1 mind existed in a narcissistic fusion with matter, a condition known as the primary matrix. At this level of consciousness there is no differentiation of self from others, subject from object, inside from outside. After the ego unfolds however, it develops the strength to break away from Level 1 identification; it transcends the primary matrix. The unfolding ego, said Freud, possesses two basic instincts or urges, the life instinct (Eros) and the death instinct (Thanatos). "After long hesitancies and vacillations we have decided to assume the existnce of only two basic instincts, Eros and the destructive instinct ...The aim of the first of these basic instincts is to establish ever greater unities...in short to bind together. The aim of the second is, on the contrary, to undo connections and so to destroy things. In the case of the destructive instinct we may suppose that its final aim is to lead what is living into an organic state. For this reason we also call it the death instinct." (Freud : "An Outline of Psychoanalysis")

So far so good, because what Freud has recognised in the life instinct and the death instinct is nothing other than what we have previously called the synthetic force (Vidyamaya) and the analytic force (Avidyamaya). In the normal course of healthy development a person at the personal egoic (Level 2) stage will be drawn by Attraction of the Great to transcend the ego and rise to the trans-personal stage of development. But it is here that Freud comes unstuck because he does not accept the existence of the causal mind and does not distinguish the prepersonal stage from the trans-personal stage. Freud looked around for some greater unity to which Eros might be attracted and could see only the primary matrix. He was therefore forced to turn the Eros around 180° and redirect it towards the

primary matrix. Eros now became that urge of the ego to establish a union with the id (Level 1); to recapture the limitless narcissism that Level 1 once enjoyed; "to become one with the world of love and pleasure".

Here is a classic confusion of the pre-personal with the trans-personal because they both appear as non-personal. Freud correctly perceived that the ego desires to transcend itself but proposed a regressive, futile and ultimately life-destroying means of doing so. The union of mind with Consciousness (Samadhi) is substituted for union of mind with matter (primary matrix). Unwittingly Freud turns the life instinct into something which is ultimately destructive. When Freudian psychology is presented with a genuine spiritual experience it is forced to interpret it as a spontaneous regression of the ego back to the id. The ego, exhausted in its continual battle to keep the repressed content of the id under control, slips back into the primary matrix. This is not even regression along the second leg of Freud's developmental schema but regression back along the first leg. Spiritual experience becomes nothing but ego weakness.

All this is very reminiscent of the Marxist notion of union of matter and consciousness. It is not surprising therefore, that Marxist theorists, in an attempt to add psychological depth to dialectical materialism, have turned to Freud. They both share the same fallacious world view, namely the earthy world view.

The earthy world view is in fact the orthodox and mainstream view held by Western psychology. Piaget, Sullivan, Adler and Arieti were all infected with it, says Ken Wilbur. In Western mainstream sociology, for example, collective transpersonal experience is perceived as a pathological social condition. So the emergence of a 'new age' consciousness is denounced as a reaction to Level 2 social consciousness and as a regression to primitivism. Even worse it is seen as the thin end of the wedge which leads to the 'Jonestown Syndrome'. Of course it does not help that 'new age' consciousness frequently falls into the etherial world view fallacy.

Social biologists and Darwinian evolutionists provide an interesting variant to the earthy world view in that they dismiss the second leg of human development altogether. For them the egoic/logical/personal Level 2 mind is the pinnacle of human

evolution. They deny the validity of trans-personal mind, but they find no therapeutic value in a return to the pre-personal primary matrix.

This has been a very cursory examination of two forms of the pre-trans fallacy. For a more comprehensive examination the reader should turn to the works of Ken Wilbur. Due to the theoretical inadequacies of Western psychology, its results in the practical sphere are often questionable. Useful results come only where a therapist works within the correct half of the pre-trans fallacy. Only a minority of Western therapists have avoided the pre-trans fallacy altogether. If the theoretical defects of mainstream Western psychology can be corrected, which means a recognition of the three stages of human development and their culmination in union of mind and Consciousness, then Western psychological practice will be able to provide great impetus to human spiritual progress.

MATTER, MIND AND IDEOLOGY

In the last two chapters we discussed the evolution of plants, animals and humans as individuals. During the course of evolution the individual mind unfolded until today in human beings all five levels of unit mind are potentially at our disposal. Because of this, human beings have the possibility of completing the process of Prati-saincara by merging their unit consciousness in Cosmic Consciousness. Individual liberation does not however end the story of Prati-saincara, since human beings are not only individuals. They are also social beings.

The path of Prati-saincara is synthetic, so it is inevitable that human beings should come more closely together and function collectively. Such a group of people is known as a "society". The purpose of the next three chapters is to give an outline of P. R. Sarkar's social analysis. In broadest terms, his social analysis is encompassed within two philosophies; the Progressive Utilisation Theory (Prout) first published in 1959, and the philosophy of Neo-humanism, first published in 1982. Prout is a socio-economic theory while Neo-humanism links Prout to Sarkar's spiritual philosophy.

The Individual and the Collective

The English word society can be traced back to its Sanskrit roots as Samaj, meaning a group of people moving together. In this context, moving means progressing along the path of Parti-saincara. The question immediately arises as to the nature of the relationship between the individual and the collective. Human society has been viewed at various times in history from two prespectives. From the individual perspective, a society appears to be composed of innumerable individuals each persuing their personal lives as best they can. From the collective perspective, a society appears to be a dynamic corporate entity that has a life of its own. In reality, the society and its individuals are bound in an inextricable relationship of mutual support. Where individual lifestyles are not in harmony with the corporate entity, then inevitable social disintegration will follow. But if the corporate entity imposes

intolerable conditions on its individuals, then the same will also happen. Where the nature of individual life and the needs of the corporate entity are in harmonious co-operation, then in this united movement lies society's sublime potential.

An important defect of many previous social theories has been their analysis of the individual/collective relationship. In every case where nations have organised their society from predominantly one perspective or the other, human happiness and welfare have suffered. The capitalist and communist systems are obvious examples.

It is impossible to develop useful social theories without an understanding of both the individual human being and the corporate or collective entity. A study of the corporate entity is made a little simpler because in many respects its structure and development parallel those of the individual. Just as the human being has a physical body, a mind and consciousness, so too the collective entity has its physical and mental components and also consciousness. And just as the human mind has three levels (here treating the causal mind as one level) so too the collective mind has its three levels, the crude collective, the subtle collective and the causal collective. The collective mind has both objective component and subjective component, and because the collective mind unfolded sequentially during the course of human history, so we observe the development of its various components of world outlook and moral outlook. And finally, the collective entity, like each of the human individuals within it, is drawn by the Attraction of the Great along the path of Parti-saincara to express ever more subtle and beautiful forms.

Social dynamics are therefore quite complex. Not only is there an upward and downward flow of action through the various elements of the collective structure, likewise for the individual human, but there are interactions between the collective and the individual at each level.

Materialistic philosophies which do not accept mind, whether individual or collective, as having any objective real existence cannot possibly arrive at an adequate understanding of social dynamics. In Marxism for example, mental phenomena have no existence independent of matter. They are reflections of matter and remain embedded in matter. Any talk

of mind as an independently existing entity is dismissed as an illusion created by the words we use to describe internal experience. More will be said of this in later chapters.

Prout accepts mind as an existential entity, that is, as having some objective reality as opposed to being purely a philosophical concept or play of words. Matter exists; mind exists. Matter is known to us through our senses; mind is known to us through a process of introspection and intuition. Mind is a quantisized energy form just as matter is a quantisized energy form. But matter is a more concentrated form of energy; by analogy, mind is to matter as steam is to water. Mind is subject to many of the same laws that define the behaviour of matter; for example, the laws of causation and the laws of action and reaction. Both mind and matter are forms of bound Consciousness which seek to escape their bondage; but here there is a difference. Whereas mind is drawn to escape its bondage by Attraction of the Great along the path of Prati-saincara, matter spontaneously seeks to escape its bondage along the path of Negative Saincara.

Ideology

To establish a harmonious relationship between the individual and collective entities, a system of social codes is required. Codes regulate everything from the conduct of family life to global trade. It hardly needs to be said again that the ultimate purpose of these codes is to move the society faster along the path of Prati-saincara. Wherever Prout uses the term progress, it means movement towards the Great. Ideally social codes should establish a system of individual rights and responsibilities which protect the collective welfare and promote all round social progress.

Some codes change frequently depending upon the current status of scientific knowledge, for example, those to do with community health and hygiene, whereas other codes persists unchanged for thousands of years, like those that forbid incest. While Prout recognises that social codes must be continually adjusted for changes in scientific knowledge, nevertheless they must always revolve around the Attraction of the Great. This brings us to the question of ideology. Social codes are not purely

utilitarian responses to changes in external conditions and scientific knowledge. They are created within and persist within the context of an ideology—that is, a world outlook which answers such questions as "Where did the universe come from?" and "What is the purpose of human life?"

The world view of the 19th century, which still persists widely in the 20th century, was of a mechanistic, clockwork universe revolving around God at the centre. Matter consists of solid little marble-like balls known as atoms. The universe is a vast aggregation of atoms which bounce into and rebound off one another in just the same manner as billiard balls. If one knows the current status (position and speed) of all the relevant balls or atoms, then it is possible to completely predict future events. In this mechanistic model matter is inert; atoms have no motion other than what they acquire through collisions with other atoms. Such a world outlook obviously requires a prime-mover or first cause, and God fulfills that function. Thus there is in the 19th century world view a strange separation between God and matter, which carries over into human beings as the dichotomy between spirit and flesh and into the social realm as the dichotomy between church and state. The link between the two is established by social codes, but the origin of social codes is completely one sided; they come from God; they are transcendent; they are divinely inspired; they are of the spirit but not of the flesh; and they are imposed on human beings but they are not of human beings.

By a magnificent flourish of his philosophical pen, Marx declared that matter and motion were inseparable. Hence there was no need to postulate the existence of God or any metaphysical entity as prime-mover. All that exists is matter in motion. Motion is inherent to matter and therefore matter is sufficient unto itself. Now Marx was quite right in perceiving that motion is inherent to matter. This is the message of 20th century Quantum Mechanics. But with the same flourish of this pen, Marx also did away with Consciousness, subjective portions of the human mind and all the subtler human qualities associated with the transcendent or causal mind. There is no pivotal point, no goal, no absolute in the Marxian universe. Everything is relative and objective. The universe unfolds but it does

not unfold in any particular direction, let alone a transcendent direction.

Marx was obliged to view social codes and ideology as purely utilitarian devices constructed by human beings to cope with an ever changing material universe. Ideology became one hundred per cent relative and derivative of matter—ideology, morality and social codes are things of the flesh and not of the spirit. They derive no transcendent input whatsoever. The Marxian notion of ideology is a circumscribed kind of collective psychology; it consists of those beliefs, ideas and values in a society which consolidate the existing order. However in classical Marxism, ideology is not a necessary part of human existence—rather it is seen to be a veil of illusion by which the ruling class persuades the oppressed classes to accept their subordination as natural. The role of ideology legitimates the existing economic order and consoles the oppressed while mystifying them. In an ideal communist society, the veil of illusion would be torn aside. There would be no need for it because society would be classless and without hegemony. Ideology as a tool of oppresion would be obsolete.

The Euro-communists did much to shape the naivity of this classical picture into an effective political theory. Antonio Gramsci, founder of the Italian Communist Party, recognised that the ruling class retains power not only because it controls capital but because it controls all social, political and cultural expressions as well. Thus the oppressed classes look at the world and their own condition through the eyes of their oppressors. Gramsci advocated the construction of a rival hegemony through infiltration and transformation of the media and educational institutions. Nevertheless Gramsci was a materialist and believed that the human ability to understand itself and its condition was possible only within certain limits "by methods of philology and criticism", ("Modern Prince and Other Writings"). Philology, the study of language and words, enables human beings to remove the illustion of transcendence that lurks in the words we use to describe human inner experience. The object of Marxist philology is to make that which is inner become outer, to make the subjective become objective, which is the complete opposite of the spiritual approach.

More recently Euro-communists such as Herbert Marcuse

have explored the links between individual psychology, ideology and class hegemony. Influenced by Freud, they believe that sexual repression plays a key role in class hegemony. But, as has been explained already, materialist analysis is ultimately hampered by two major defects; it does not recognise the existential reality of mind, and even worse, it does not recognise the ultimate transcendent/spiritual orientation of human evolution. It is this latter truth which, according to Prout, must be incorporated into ideology and which is the justification for ideology.

Prout does not accept the Marxist belief that ideology is purely a utilitarian construction, of the flesh alone, nor does it accept the older belief of medieval times that social codes are given by divine revelation, of the spirit alone. According to Sarkar, ideology takes its initial inspiration from the Attraction of the Great. That pure feeling or experience when one is aware of nothing else but the attractive allure of the Great, is known as Bhava. It belongs to mind Level 5 alone—but even when not directly experienced, the idea of Bhava filters down to the lower levels of mind. At Level 4, pure idea or Bhava is differentiated into the three components of human Dharma: expansion or Vistara, harmony or Rasa and service or Seva. These three characteristics, which belong as much to the collective social mind as to the individual human mind, are consciously or unconsciously the inspiration behind all the social and political values that have been treasured so much in the course of history. The Western political tradition may seem far removed from the Eastern spiritual tradition yet the inspiration for human Dharma links them both. Take for instance the rally cry of the French revolution—Liberty, Equality and Fraternity! Each element of this political trinity protects and promotes the expression of human Dharma.

Freedom as a political value protects the innate urge of the human mind towards expansion. Freedom of speech, freedom of thought, freedom of movement all permit human beings to explore and be adventuresome in the physical, mental and spiritual worlds. Freedom has always been important in the Western political tradition because it protects a primary need of the mind.

Equality as a political value protects the desire of the human mind for harmony. Inequalities of status, power and

wealth that arise as a result of exploitation and suppression are responsible for most of the visible violence in the world today. Of course the imposition of exploitation and suppression is itself a form of violence, even if less visible. Social inequalities generate disharmony and dis-equilibrium in a community. The grosser the inequality, the greater the disharmony. Likewise, the super-importance that humans bestow on themselves, in relation to animals and plants, creates a disharmony in the larger ecological community. In short, humans strive for equality because it creates a social harmony that in turn nourishes the quest of the mind for spiritual harmony.

Fraternity as a political value is perhaps the least understool of the three. More will be said of it a little later; suffice it to say here that fraternity is a bond of affection between human beings that generates a powerful sense of unity. It is an ego transcending sentiment in that the individual identifies with the welfare of persons other than themselves. It is a sentiment which encourages people to make sacrifices and do great deeds. Fraternity and service are bonds which hold human society together.

While social and political values derive inspiration from Level 4 of the mind, they do not remain there. They continue to filter down through the mind until finally at Level 2, and more specifically the metaphysical layer of Level 2, they are expressed in the form of language. It is here that the original idea or Bhava becomes expressed as a fully developed ideology, a collection of ideas about the origin of the universe and the meaning of life. Thus ideology is the expression of Bhava in the Level 2 mind. Sarkar says, "When this Bhava or idea is conceived on the psychic level, it is 'ideology'. Ideology, therefore is the conception of idea and nothing else". Any other use of the term ideology says Sarkar, is misconceived. "Hence when we call some materialistic or political principles of a person, party, nation or federation an ideology, it is wrong use of the term. Ideology involves in it a spiritual sense; it is an inspiration which has parallelism with the Spiritual Entity; (that in the Great)." ("Idea and Ideology" p. 76).

In summary then, the broad content of ideological ideas in Level 2 mind is derived from transcendent sources; but we note that the transcendent sources are within human beings. They

are not imposed from an outside transcendent being. This is a highly significant distinction. According to Prout, ideology is both of human beings and transcedently inspired because human beings are in part transcendent beings.

The downward flow of Bhava does not stop at the metaphysical mind with the construction of an ideology. It next filters down to the logical mind which is still within Level 2, (see chapter six, Figure 33), where it meets the upward flow of ideas, emotions and sensations derived from the Level 1 mind. The logical level is a meeting ground in which spirit and flesh finally meet. And out of the conflict between the Attraction of the Great and the demands of matter, social codes emerge. Social codes attempt to reconcile the transcendent with the material. Because all life, including human beings, is grounded in a material body, the needs of the material body must be satisfied if the quest for the transcendent is to succeed. Here Prout agrees with Marxism that there is and must be a pragmatic and relative component to social codes.

Social codes are neither etherial nor abstract statements; they are necessarily concrete and logical. They define acceptable and unacceptable forms of behaviour. They place human beings into various physical and mental categories which are frequently artificial because they must be so clearly defined. For example, the time of becoming a legal adult is usually defined by age, yet everyone knows that people mature at different rates. The Olympic Games must define male and female, and yet with development of hormone treatments, the distinction is increasingly blurred.

From the opposite perspective social codes are meant to help individuals and the society respond to the Attraction of the Great. Social codes must have a transcendent component and yet the transcendent defies entrapment within logical language. Hence from both the perspective of matter and the perspective of the transcendent, social codes are in a certain sense artificial; they satisfy neither the inherent nature of the transcendent nor that of matter. The purpose of social codes is to catalyse the transformation of matter into Consciousness in the social arena; but they are unable to define the latter and they must not surrender to the former. And herein lies the challenge of collective living.

Prout agrees with Marxism that the ruling class in a society will endeavour to create social codes that exploit the other classes and will create pseudo-ideologies that attempt to justify that exploitation. The capitalist class and its economic ideology are a case in point. But to dismiss all ideology as a tool of exploitation is throwing the baby out with the bath water. And even where more sophisticated Marxists, such as Gramsci, recognise the need for ideology as a "rival hegemony" to that of the ruling class, Prout asks what is the point of constructing a rival hegemony if it does not accept the spiritual orientation of human evolution. Whether one perceives the role of ideology as an aid in class liberation or as a means of establishing social harmony (in fact it fulfills both roles), it can be successful in neither if it does not accept pure Unbound Consciousness as the ultimate human aspiration.

Private Property Versus Collective Property

The principles of Prout are somewhere between idological statements and social codes. They are more specific than ideological concepts, yet they are more general than social codes.

The socio-economic philosophy of Prout is encapsulated within five principles. The first of these says, "Not individual should be allowed to accumulate any physical wealth without the clear permission or approval of the collective body." Obviously within this principle is the implicit assumption that private property is not an inalienable right of human beings. Just how Prout arrives at this principle is the purpose of this section. It is a principle which flows naturally from a spiritually inspired ideology and yet allows for the reality of an ever changing material world.

Prout arrives at the above principle by first asking the question, "Who owns the universe ?" The question is ideologically important because the answer to it determines the way a society manages its economy, shares its wealth, cares for its environment and perceives itself in relation to nature and the universe.

The belief in private property—the belief that it is an inalienable human right to own wealth and control it for ones personal advantage—is widespread in the world today, yet it is also

peculiar to the Western tradition. It is of course one of the ethical foundations of capitalism. If we look at other cultures or traditions, however, it becomes apparent that the notion of private property is a minority belief. The tribal cultures of North and South America and Africa; the oriental civilisations of India, China and S. E. Asia ; and the Australian Aboriginal culture virtually all share the idea that humans do not own the land but are rather its protectors or guardians. This attitude may best be summed up in the words of a North American Indian: "The principles of righteousness demand that all thoughts of prejudice, privilege or superiority be swept away and that the creation is intended for the benefit of all equally—even the birds and animals, the trees and the insects as well as the humans. The world does not belong to humans—it is the rightful property of the Great Creator."

An important aspect of these cultures is animism. Everything, even the soil and rocks, is endowed with life, with a sacredness. There is no separateness or distance between the land, the Creator, the tribe and the individual. By contrast, in the Judeo-Christian tradition, humans are not only separate from the land but also from God. God certainly created humans but as entities separate from itself. This separateness is at the heart of the church/state dichotomy and acquired its greatest expression in the Protestant Churches of Europe. It is no accident that these churches provided the initial theological underpinnings for the rise of capitalism.

How does Prout answer the equation, "Who owns the universe ?" Prout accepts the wisdom of Eastern philosophy that matter is nothing but congealed energy and that energy is nothing but an expression of mind. Thought or mental vibration in turn is nothing but the metamorphsis of Consciousness. Thus Prout accepts that this universe is ultimately a thought-projection of Cosmic Consciousness, and that Cosmic Consciousness is a living, intelligent and self-aware Entity. The animism of the great majority of the world's religious, the Judeo-Christian tradition being a notable exception, is a simple recognition of this fact. It follows that this thought created universe, with all its contents, is a product of the Cosmic Entity alone, and that no individual can justifiably lay claim to some portion of it as their personal property. Sarkar argues the point thus:

"This universe is the expression of the Macrocosmic Mind and it is in the transmigratory activities of this imaginative flow that everything is being created, maintained and finally dissolved. In a personal way, when a person designs something in their mind, for that moment they are the owner of the thing and none-else. When a thought-born person moves in the glories of this imaginary creation, it is not the thought-born person who is the owner of this creation. The real owner is the imaginator. This world is created in the imagination of Brahma (the combination of Consciousness and Prakrti); so only It can be the real owner of Its imagination and not the created beings." ("Problem of the Day" p. 1.).

At this point a clarification is probably required to clear any misapprehension that Prout has fallen into the trap of traditional idealism. Idealism versus materialism is an old debate in Western philosophy. Idealists argue that only the human mind and what the human mind thinks of is real; the external world as an absolute or independent thing is an illusion. Materialists on the other hand argue the opposite. They say that only the external world of matter is real and that the human mind is merely a reflection of external reality, or is ultimately constructed from and therefore dependent upon matter. Note that neither traditional idealism nor materialism make a distinction between mind and consciousness, as does Eastern philosophy. Prout resolves the idealism/materialism conflict by saying yes, the external world is real and is there whether I happen to be thinking of it or not; but what I see is not matter absolute but the thought projection of Cosmic Consciousness. Furthermore, what I see as being the external world also depends upon which level of mind my consciousness is functioning through. More will be said of this in chapter nine.

Returning to the idea of Cosmic Consciousness as the creator of this universe, skeptics will argue that a belief in a Cosmic Entity is nothing but a sentimental or superstitious idea designed to fill a social need. In reality, they say, there is no such existential entity. According to Prout it is possible to verify the existence of a Cosmic Entity through the practice of Intuitional Science, and more will also be said on this in later chapters. Western science is itself recognising the inadequacy of materialism and moving slowly but surely to a position where it

accepts the unity of matter, mind and intelligence. Mind does not act on matter from a distance but acts from within matter. Every physical entity, whether it be a rock, a star, a plant or a person consists of a unity of matter, mind and consciousness. This is the profound truth expressed by poets who contemplate a simple stone or waterfall and see within it a reflection of the universe.

From a Proutist viewpoint, the socialisation or collective ownership of wealth is no longer an issue because it already was socialised even before human beings had the capacity to think about it in political terms. The issuse is not the validity of collective ownership, but how the collective will manage its wealth for the welfare of all. Now that an ideological position has been established and expressed as a principle, it must be transformed into the language of social codes, bearing in mind the previous experience humans have had in managing their wealth. Where all wealth has been socialised by the state on behalf of the people, the result has not always been beneficial. Nor has complete private enterprise or complete nationalisation been successful.

Prout advocates a three tiered system of wealth management and production. At the highest level, key resources and production should be managed by public utilities whose management boards are at least partly elected by the people whom the utility serves. The middle tier, and in Prout's opinion this should be the largest tier, consists of co-operatives. The Mondragon experience is an inspiring and instructive example of how co-operative experience might function. Finally Prout reserves the lowest and least economically powerful tier for privately managed business. Strict controls should exist to prevent the accumulation of capital outside the standards set for each tier.

The relationship between human beings and the material world has been suscinctly summarised by P. R. Sarkar in the following passage from "Problem of the Day". "We should not forget even for a moment that this whole animate world is a large extended family in which nature has not assigned any property to any particular individual. Individual ownership has been created by opportunists guided by selfish motives, so that the defects of this system may provide good opportunities and enable them to grow fatter in a parasitic way. When the whole

property of this universe has been inherited by all creatures, how can then there be any justification for the system in which someone gets a flow of huge excess, while others die for want of a handful of grains ?"

Much has already been written on the subject of Prout's three tiered system of economic management, so nothing more will be added here. The main reason for introducing the concept was to show how social codes emerge out of a combination of ideological input and practical experience in the material world.

The Five Fundamental Principles of Prout

The five fundamental principles of Prout were first enunciated by P. R. Sarkar in 1959 as follows :

1. No individual should be allowed to accumulate any physical wealth without the clear permission or approval of the collective body.
2. There should be maximum utilisation and rational distribution of all mundane, supra-mundane and spiritual potentialites of the universe.
3. There should be maximum utilisation of physical, meta-physical and spiritual potentialities of the unit and collective bodies of the human society.
4. There should be proper adjustment amongst these physical meta-physical, mundane, supra-mundane and spiritual utilisations.
5. The method of utilisation should vary in accordance with changes in time, space and person; and the utilisation should be of a progressive nature.

Proutists are often asked to give an explanation of Prout in a few short sentences. While the whole of Prout is summed up in its name—Progressive Utilisation Theory—Sarkar has given the Five Fundamental Principles as the encapsulation of this socio-economic philosophy. The reader coming across these principles for the first time may find them concentrated and somewhat unapproachable. The purpose of this section is to help clarify the five principles bearing in mind that several other explanations of them have already been published; see for

example the books "The Liberation of Class" by Tim Anderson and "Progressive Socialism" by Gary Coyle.

Because there are five principles, it is useful to relate them to the respective five levels of the collective mind. Sarkar himself does not make any such overt connection, but nevertheless it is helpful to interpret the principles as if they are five concentric circles. The inner most circle represents the first principle and so on to the fifth principle which is the outer most circle. The principles are more easily understood through their inter-relationships than independently. The outer principles have a broader scope and authority than the inner principles, but they cannot be successfully implemented unless the inner principles have been established. The first principle, for example, is the hub of Prout's socialist economy; while the remaining principles are dependent on the first, the socialisation of wealth does not represent the final aspiration of Prout. The maximum utilisation and rational distribution of wealth, the second principle, are higher aspirations than the first but dependent on it. Similarly this is not the final aspiration—and so on.

It is also important to remember that the Five Fundamental Principles are relevant not only to the organisation of a national economy, but to any collective group of people from a family unit up to the earth's entire population. Examples below demonstrate this universality.

The First Principle. "No individual should be allowed to accumulate any physical wealth without the clear permission or approval of the collective body."

The ideological background to this principle was discussed in the last section. The principle refers only to physical wealth because such wealth is limited and used up in its consumption. By contrast intellectual, cultural and spiritual wealth are not diminished by consumption and therefore there is no need to limit their acquisition on these grounds. Says Sarkar: "The universe is the joint property of all. All have the usufructary right of enjoyment, but no one has the right to abuse. If anybody gathers much wealth and hoards it, they directly curtail the happiness and convenience of others in the society. Their behaviour is flagrantly antisocial. Therefore no one should be allowed to hoard wealth without the permission of society".

The system by which permission or approval is given will vary according to the technology and political structure of the day. Most often the approving authority for the distribution and management of wealth will be encoded in statutes, laws and by-laws; but whatever the case the ultimate approval must come from a body of people who represent the collective ; for example, parliament or local council.

This principle does not exclude the necessity of personal property, where this is understood to be personal responsibility as opposed to personal ownership. The demarcation between that wealth which is to be personally administered and that wealth which is to be collectively administered must be decided by collective consent and not by a competitive scramble in an economic jungle. This principle is Prout's declaration of socialism; it is the ethical foundation for all of the community's economic activity.

Examples of the first principle include no private ownership of essential community resources such as minerals and energy; control over hoarding; and upper and lower limits on income. An example of this principle at the family level, whether extended or nuclear, is the assumption that the breadwinners do not keep their earnings to themselves but seek to care for the entire family.

The Second Principle. "There should be maximum utilisation and rational distribution of all mundane, supra-mundane and spiritual potentialities of the universe."

As a direct result of the first principle, which establishes social control over the accumulation of wealth, Prout is able to take effective economic measures which maximise productivity and ensure rational distribution. In a capitalist economy government fiscal measures designed to help the poor are invariably ineffective because the government has no direct control over the power of capitalists to hoard and manipulate wealth. Hence the implementation of Prout's first principle is a necessary precondition to the successful implementation of its second.

Prout's economic philosophy recognises three types of wealth: physical, mental and spiritual. These however are given different names depending on the point of view of analysis. In this principle, a community's wealth is looked at from an objective or utilitarian point of view with the intention of increasing

that wealth; and hence Sarkar refers to "mundane, supra-mundane and spiritual potentialities". By mundane he means all material and physical objects and all the practical and technological knowledge that can be used to manipulate matter. Supra-mundane refers to all abstract knowledge, meta-physics, philosophy, and psychic and creative capacities. Spiritual wealth refers to the most subtle vibrations which pervade certain places such as beautiful cathedrals, temples, landscapes etc. Those persons and that music, painting and literature which have the capacity to inpire a longing for the Great are also part of a community's spiritual wealth. All these three, mundane, supra-mundane and spiritual, are the "potential" wealth of the universe; that is, they are a source of potential energy that can be tapped. They are potentialities until they are used.

As this principle is economic and essentially utilitarian in nature, it must to some extent view even human beings in terms of their objective utility for the whole society. Maximum utilisation and rational distribution demand a logical approach reminiscent of mind Level 2 —they draw upon such logical laws as diminishing returns and economies of scale. Prout does not reject the useful economic knowledge acquired through capitalist experience. But such knowledge must of course be subservient to the collective welfare and to higher social aspirations.

Production and distribution are the two principal aspects of economics. Rational distribution implies justice and efficiency rather than strict equality, while maximum utilisation means not allowing beneficial resources to lie idle. Obviously maximum utilisation cannot be an end in itself, and therefore this second principle must take its inspiration from the three higher principles.

Examples of the second principle of Prout include pursuit of full employment; opposition to dumping of agricultural surpluses; opposition to fallow land policies which boost agricultural prices; a guaranteed minimum income scheme: an education system which awakens latent spiritual and creative potentialities within children; and at the family level, the attempt to prevent waste of food, energy and water.

The Third Principle; "There should be maximum utilisation of physical, meta-physical and spiritual potentialities of the unit and collective bodies of the human society."

Whereas the second principle is objective in outlook and concerned with all types of wealth, whether animate or inanimate, the second principle is subjective and concerned with the all round development of living things, whether plant, animal or human. This principle says in effect that the only purpose for the social and economic activity circumscribed by principle two, is to enhance the unfolding of life and all its potentialities. Only after meeting the objective needs of a society is it possible to cultivate subjective expressions, because the problems of basic needs will dominate a person's mind until they are overcome.

Prout recognises that all living things have the potential to grow physically, mentally and spiritually and that potentiality has got to be harnassed and brought to fruition, says Sarkar. From this perspective Sarkar refers to "physical, meta-physical and spiritual potentialities". Physical refer to development of the body and its sensory and motor skills. Meta-physical refers to the cultivation of intellect and psychic powers. Spiritual refers to the development of wisdom, mental peace and the ability to impart these to others.

Perhaps the most important aspect of this third principle is the reference to the collective body in addition to the individuals. Sarkar states that: "One must not forget that collective good lies in individualities and individual good lies in collectivity. So it is with the sole intention of doing collective good that one will have to devote oneself to individual good". The collectivity is more than just a sum of its component individuals. Like the individual, the collective has physical, meta-physical and spiritual potentials. A nation's cultural heritage might represent part of its collective spiritual potential for example. Sarkar argues that a few capable or learned people are no indication of the collective status, just as a woman prime minister is no indication that women in her country are liberated. All people have the potential for expansion and the collective good means the collective expansion of all individuals.

Examples of the third principle include development of the arts and sciences, not for their own sake, but for the collective welfare; rewards and incentives given to those people who utilise their skills for the collective welfare; and at the family level the arrangement of a good education for both male and female children, and the attempt on the part of adults to extend their

love and affection to all their children and not just their favourites.

Occasions will frequently arise where the application of the third principle clashes with the application of the second. For instance, principle two many indicate that a woman should remain as a typist/secretary because she is most efficient at that job, whereas principle three may indicate that she should take on a business management position so as to further her own career and enhance the status of women in the community. Such examples of conflicting principles are inevitable when one tries to mesh logic with humanism or objectivity with subjectivity. How these conflicts are resolved is the problem addressed by the fourth principle.

The Fourth Principle: There should be proper adjustment amongst these physical, meta-physical, mundane, supra-mundane and spiritual utilisations".

The second principle of Prout states that there should be maximum utilization and rational distribution of the three types of wealth. The third principle states that there should be maximum utilization of the potential in people to develop and grow. Prout regards the potential for growth in people as a form of wealth because it is the endeavour to realise this potential that drives society onwards to achieve greater things. The fourth principle states that "there should be proper adjustment amongst these . . . utilizations." How does this simple statement help to solve the possible conflicts that arise between the second and third principles? It is necessary to understand the properties of the different kinds of wealth.

In Prout the mundane and physical wealth of the universe is said to be crude because it exists in abundance, yet is not very powerful. Supra-mundane and mental wealth is said to be subtle because it is not so abundant and is more powerful. For instance, it is a fact of military history that superior numbers and weapons have often been defeated by superior tactics and strategy. Spiritual wealth is the most rare form of wealth and yet it is the most powerful and the most important for society. People are inspired to acts of greatness by love rather than logic.

The relative strengths and abundances of the crude, subtle and spiritual types of wealth determine the way they are utilized.

Sarkar argues that "...while taking service from a person who is physically, mentally and spiritually developed, the society shall follow a well balanced policy of equity and fair play. If only one of the three endowments, physical, intellectual or spiritual, be found developed and manifest in a person, the society shall take such service from them as is suitable to that paricular endowment or aptitude. If two endowments, namely physical and intellectual, are found sufficiently in a person, the society shall follow a well balanced policy by taking from them intellectual services in greater measure and physical services only sparingly, for intellectual power is comparitively subtle and rare. If all the three endowments are found in one person, the society shall make greater use of their spiritual services, less use of their intellectual ones and still less of their physical ones. Those that have spiritual power are capable of doing the greatest service to the cause of society."

Following these principles, Prout would not condone the Maoist policy of forcing intellectuals to labour in the fields. On the other hand, the society should not place blocks in the way of those intellectuals who desire to develop their physical or spiritual abilities.

To achieve a proper adjustment amongst the various utilisations mentioned by Sarkar, it is obvious that a society must have a good degree of intellectual and spiritual acumen in order to recognise the different kinds of wealth. This acumen or discrimination or Viveka is a quality associated with the fourth level of mind, in this case the collective mind.

The Fifth Principle: "The method of utilisation should vary in accordance with changes in time, space and person; and the utilisations should be of a progressive nature."

After building up a social structure with the first four principles of Prout, one more essential ingredient remains to be added—direction. Social ethics, an efficient economy, human welfare and proper adjustment are not goals in themselves. What is the social goal of Prout? Prout is not a utopian social theory. It does not envisage some ideal future society in which every person will love their neighbour and in which selfish impulses are unknown. Struggle will always be inherent in the human society and it is through this struggle that a society evolves and grows. The social goal of Prout, as defined in the

fifth principle, is to ensure that individual and collective movement is always "progressive". P. R. Sarkar has written a short essay on "The Meaning of Progress" which we must now review in order to appreciate the fifth principle.

The Meaning of Progress

What is progress ? In normal usage, progress is considered to be the attainment of a greater degree of happiness, and Prout also accepts this as a proper definition. However Prout observes that most people and most societies have mistaken ideas about what will achieve happiness and what will not. Most people think of happiness as greater material possessions, and as a corollary social happiness comes from economic growth and technological development. But economic growth today is a dirty word and for obvious reasons. Whereas once it meant happiness, prosperity and the easy life, now it means inflation, high taxes, the urban blight, environmental pollution, the energy crunch and nuclear war.

In "The Meaning of Progress", P. R. Sarkar argues that progress in the sense of increased happiness is not possible purely in the physical plane. He says that while we may think that the motor car is progress compared to the bullock cart and that the aeroplane is progress over the car, in reality these developments are accompanied by negative factors such as chemical and noise pollution, car accidents, jet lag and the like. Jeremy Rifkin, in a recent book, "Entropy : A New World View" has developed this idea further.

Entropy means that things tend to run down, wear out, become exhausted. The entropy law or the second law of thermodynamics says that "every time energy is transformed from one state to another a certain penalty is exacted. That penalty is a loss in the amount of available energy to perform work of some kind in the future." While the entropy principle may appear to be something new, each of us has everyday experience of it, for it simply means that whenever we perform some constructive work, say cook a meal, we will also make a mess. The creation of order is inevitably accompanied by the formation of some disorder. We may attempt to clean up the mess but in so doing, we create yet another mess elsewhere.

Cleaning the dishes transfers the mess to the sewage; cleaning the rubble from a building site transfers the mess to a dump. Rifkin argues that our society is consuming so much energy that the accompanying messes are impossible to cope with. "Every so-called advance in efficiency, as measured by new technologies designed to speed up energy flow, has only hastened the overall process of dissipation of energy and disorder in the world", he says. He views pollution, cancer, heart disease and other social problems as the entropy manifestation of a highly industrialised, petro-chemical environment.

Sarkar extends the argument to the mental or intellectual sphere by observing that increases in knowledge and psychic power are accompanied by a negative factor. He argues that, "In ancient times when human beings were intellectually backward, they had fewer emotional complications. One who is intellectually deficient is also less receptive to emotional disturbances, whereas a highly intellectual person will be extra-sensitive in the emotional sphere. They create unnecessary problems out of nothing and waste sleepless nights. Thus as far as pleasure and pain are concerned, they balance each other out in the intellectual sphere also." It is important to note that Sarkar argues only that development in the physical and mental spheres generates equal degrees of pleasure and pain, positive and negative, where as Rifkin and many others appear to argue that the negative aspects of technological development out-weigh the positive.

According to Sarkar, it is only in the spiritual sphere that progress is possible because here movement is not negated by counter movement. "There is no pleasure and pain in the spiritual field. The reason is that since the goal is not finite, the states of pleasure and pain, suppression, and psychic denial do not exist. The uniqueness of the spiritual experience is that there is no negative movement. In the absence of negative movement, every movement is progress. Thus, there is no question of minuses ; there are only pluses. This is a movement from negativity to positivity and this, therefore, is the only real form of progress." Progress in the spiritual sphere is experienced by the individual as expansion of consciousness, peace of mind and the ability to love more freely. In the society,

spiritual progress manifests as a greater commitment to the all round welfare of humans, animals and plants.

The question arises as to whether we should bother at all with the physical and mental spheres if progress is not possible in them. Sarkar has this to say: "It has been stated above that there is no progress in the physical and intellectual spheres. But then should all efforts in these fields be stopped altogether? Should there be no effort to develop physical science? No, we shall continue to make efforts in these fields also. We have only to be cautious about the effects of such efforts on human society, human mind and even human physique.... However, spiritual progress can be attained only on a physical and mental base. Therefore this physical and intellectual base has to be progressively adjusted to the changing conditions of time and space. Spiritual aspirants have to devise ways to protect themselves from reactions (Samskaras) in the physical and intellectual spheres."

Theories which cannot adapt to the changing world become useless; progressive theories can quickly become conservative theories if they remain static. The fifth principle of Prout recognises this danger and says that continual adjustments in the physical and mental worlds have to be made according to time, place and person if true spiritual progress is to be achieved. The fundamental principles remain unaltered but there should be changes in policy or application. Progressive utilisation is the principle but policies of utilisation, that is, social codes, must change according to time, place and person.

According to Prout, spiritual progress is consistent with scientific and intellectual evolution as long as due care is taken. We must be educated to recognise the advantages and disadvantages equally. We must be educated not to heap the disadvantages onto a minority group or onto helpless animals and plants. Such wisdom will of course not come easily, but this is no reason to condemn physical and intellectual development.

Neo-humanism

Neo-humanism is the most recent extention to P. R. Sarkar's political philosophy, being published as recently as 1982. It provides the link between his socio-economic philosophy,

Prout, and his spiritual teachings of Tantra Yoga. Neo-humanism will be introduced here only in broad terms. Since there is a strong affinity between Neo-humanism and the philosophy of deep ecology, a Western philosophical deevlopment first named as such by the Norwegian philosopher, Arne Naess, the latter seems an appropriate place to begin.

The rise of ecology as a popular political movement can be traced to the publication in 1962 of Rachel Carson's book, "Silent Spring". The movement grew rapidly throughout the 1960's particularly amongst the middle classes. Industrial pollution and pesticides were the major issues but gradually the movement broadened its base to recognise visual and noise pollution etc. It promoted conservation and an ecology conscious life-style for the individual.

The philosophical foundations of the ecology movement at this stage however were homocentric, that is, human-centred, While recognising the inter-relatedness of humans and their environment, still nature revolved around humanity and the primary thrust of ecological activism was to maintain nature in a state fit for human consumption. Ecology was concerned with the reform of human activity but did not challenge the ethical assumptions on which it was based.

In the late 1970's, dissatisfaction with this reformist ecology stimulated the development of a new ecological philosophy, described by Arne Naess as deep ecology. "The essence of deep ecology", says Naess, "is to ask deep questions.....We ask which society, which education, which form of religion is beneficial for all life on the planet as a whole." Deep ecology challenges the biblical injunction to "go forth and multiply" ; it challenges dualistic thinking, a mode of consciousness that has dominated Western civilisation since the Greeks; that is, the separation of body and soul, humans and nature, religion and state, culture and politics, conscience and intellect; it challenges the homocentricity of Western civilisation.

Deep ecology, unlike reform ecology, does not confine itself to the pragmatic issues of conservation and pollution. Instead it seeks a transformation of social values and individual consciousness. It does not reject political pragmatism but sees it as only a partial solution. Shallow ecology regards pollution as a problem of management, technology and politics, while

deep ecology regards it as a reflection of a degenerative state of the human mind. Deep ecology challenges not just the prudence but the right of humans to clearfell entire forest eco-systems. Deep ecology, like spirituality, emphasises the oneness of the universe. Clearfelling a forest is not something done to a forest but to one's self. While human beings always put themselves first, deep ecologists prefer to think of humans as "the thinking edge of the forest".

Deep ecology is not therefore a body of knowledge but a way of thinking, or a mode of consciousness. As a way of thinking it can perhaps be summarised in five principles. Each principle stems from nature, but inspires a new social outlook and a new mode of thinking. First is the principle of the interconnectedness of all living things with each other and with their environment. This gives rise to the so-called net-working mode of thinking. Second is the principle of biological egalitarianism; that the smallest participants in an ecological network are as important as the largest because without the smallest the whole net may unravel. Biological egalitarianism supports the principle of social equality. Third is the principle of diversity of species; that the long term sustainability of an eco-system is dependent upon a broad base of species and resources. This gives rives rise to the social importance of a broad based economy and multi-culturalism. Fourth is the principle of resource conservation; that resources are limited and can be made useless by pollution even before they are depleted. This is the dominant principle of shallow ecology. Finally is the principle of recycling; that a sustainable community will be one which relies on its local resources, as opposed to importing them, and recycles those resources rather than exporting them as waste products. This gives rise to a whole range of social management policies such as bio-regions or economic units.

According to one of the Western prophets of the new age, Fritjof Capra, the impact of ecological thinking in conjunction with Eastern spirituality, relativity theory and theories of the unconscious mind, have altered 20th century consciousness in a dramatic way. He says that we 20th century citizens have a perspective of ourselves and of nature that is quite different from that of our 19th century forebears—we see with totally different eyes. Capra calls this change a "paradigm shift" in

human consciousness. It has crept up on us unawares and is of course still unfolding. But we are now in a position to recognise what is happening and to embrace the new paradigm consciously. We should do so he says, because it represents a broader truth and can liberate us from numerous problems. The real world crisis, says Capra, is not so much the conflict between growth economics and finite planetary resources but between the values of the 19th century and those of the 20th century—or between old-age values and new-age values.

What are these two sets of values? They can be summed up in a few key words and ideas. For instance old-age values may be represented by such words as freedom, individualism, objectivity, linear and logical thinking, hierarchical structures, competition, survival of the fittest, heroic achievement of the great person and growth. To each of these, the new-age responds with a different idea, respectively; responsibility, collectivity, subjective approach, holistic thinking, net-working structures, cooperativity, collective welfare, collective social achievement and sustainability. These are but a few of the key words that define a paradigm shift from individualistic achievement to a holistic and collective harmony.

In biological terms the old-age is dominated by the ideas of evolutionary theory whereas the new-age is dominated by those of ecological theory. The old-age is concerned with forging ahead, overcoming the limitations of the present through struggle and high aspiration. The old-age is goal oriented. The new-age is more concerned with being, with establishing a harmony in the present. It is more concerned with process than with goals—it is content to allow the process to unfold itself without pre-empting the result. Expressed in geometric imagery, the old-age is represented by the arrow, the new-age by the circle.

So popular and powerful are these new-age ideas in Western countries that they are giving rise to a whole new culture that has variously been called the counter-culture, the alternatives movement, the life-styles movement. They have also given birth to a new style of politics that has been called green politics. Capra and Spretnsk comment in their recent book: "Green politics...is inherenly holistic in theory and practice. It is based on ecological or net-work thinking". And again, "The emphasis on

relations and interconnections...is the foundation of Green thought and being". ("Green Politics" pub. 1984).

In passing it should be noted that from the point of view of Brahmacakra philosophy, there is some danger in allowing ecological thinking to monopolise the new-age paradigm. Evolutionary development is as important a truth in nature as ecological harmony. The ascent to the higher levels of human mind, with all the struggle that this entails, is as important a truth as the harmonious integration of any particular level. In other words, by ignoring and demoting certain of the old-age ideas, the new-age could find itself armed with only half the truth. If the new-age is to be truly holistic, then evolutionary ideas must be meshed with ecological ideas; the arrow must be meshed with the circle. Some more will be said on this in later chapters.

The single most important message of Sarkar's philosophy of Neo-humanism is that whatever the ideas of the new-age turn out to be, they must be infused with what he calls "devotional sentiment". There is a great danger, and it is already apparent in Western countries, that the adoption of the correct new-age ideas means little more than a change of clothes—that after their novelty has worn off, they become simply part of the baggage of ideas that progressively minded 20th century citizens carry around with them. There is a danger of complacency—that because we have the right bunch of ideas, the right values and a broader perspective, we won't make the same mess of the world as our predecessors did.

This danger arises because it is all too easy to perceive our new-age values only as ideas. But values can never be just ideas, and if we treat them as such then we will make just as big a mess as anyone in the past, no matter how much we preach sustainability and cooperation. Certainly values are ideas, but they must also have another important component—a certain emotional or sentimental content. In fact values can only acquire social significance when they are infused with the vitality of sentiment. Here the word sentiment is not being used in any cheap or schmaltzy sense. It means that loving attraction which develops between people and other sentient creatures as they draw close and begin to appreciate one another's subtlety. In

the spiritual tradition of the East and particularly that of Tantra Yoga, such a sentiment is called devotional sentiment.

To appreciate the importance of devotional sentiment, let us go back to the days of the French Revolution. At this time, revolutionaries rallied to the cry of "Liberty, Equality and Fraternity". Fraternity is probably the least understood of the trilogy and yet it is the most important. Despite the sexist limitations of the word, fraternity contains the germ of a beautiful idea—that all human beings are linked by common bonds of affection and human worth derives simply from being part of that net-work of affection. Fraternity is an idea but it is also much more—it is a devotional sentiment that generates a powerful sense of unity. It can bind people of different classes and races in a common purpose.

The same sentiment is contained in the philosophy of humanism and it also sustains the political ideas of multiculturalism and internationalism. The sentiments in humanism and internationalism are arguably the finest achievements of the old-age because they had the potential to draw together all people in some common bond of affection.

The question naturally arises therefore, why these ideas and sentiments, if they are so potent, did not prevail in the world. There are at least two reasons. Firstly, and this will be obvious to any deep ecologist, the sentiment behind humanism did not extend far enough. It encompassed human beings but did not encompass other living beings such as animals and plants. It was anthopocentric. It had a limited radius. Secondly, and perhaps more importantly, there was no understanding of how to cultivate the devotional sentiment that lies within humanism.

The spiritual tradition of the East and in particular that of Tantra Yoga is able to help us on both these points. To understand how, we must look at the inner impulse or motivation of Eastern spirituality.

The word Yoga is a Sanskrit word that means union. It means the union of the individual human existence with the vastly greater Cosmic existence—it means union of the individual mind with the Cosmic Mind and union of the individual consciousness with Cosmic Consciousness. In the Eastern tradition, the Cosmos or universe is viewed as the expression of a Cosmic Personality. The goal of the sincere yogi is to develop

a close and loving relationship with that Cosmic Personality. So intense becomes this relationship that the relationship itself becomes the meaning of life. The ultimate consumption of the relationship is that yoga or union.

For the yogi then, all morality, all values revolve around this ultimate union or liberation, as it is also called. That which brings liberation closer is to be prized and treasured—that which puts liberation at a distance is to be avoided. But spiritual philosophy goes much further than this. The desire for liberation is much more than the conscious characteristic of the crazed yogi—it is the subconscious desire of all human beings, and even further, it is the innate character of life in its totality. The desire for liberation or union is the motive power of evolution, the force which transformed the primordial amoeba into human beings and that will in the future transform human beings into Cosmic beings. It is the force we have identified as Attraction of the Great.

We often hear or read of references to the mystical secrets of the East. When asked of these secrets, the yogiis will answer that the greatest secret lies in cultivating a devotional sentiment or loving relationship with the Cosmic Personality. Like the best of secrets, it is not one that can be understood by merely hearing it. It is a secret that can be uncovered only by personal endeavour. This is why yoga can never be learned from a book—it is much more than ethical principles, exercises and various mental disciplines. It rests on developing at first an acquaintance, then an affection and finally a love for the Cosmic Personality that manifests in the totality of nature around us.

It is here that Neo-humanism makes the connection between spirituality and politics. Effective social change means much more than having progressive ideas and living the correct lifestyle. Social change must also be infused with devotional sentiment, and this devotional sentiment is no different from that cultivated by the yogi. Furthermore, the object in social activism is the same as the object in yoga—to remove all limitations and boundaries to devotional sentiment; to extend its radius beyond humanism to include all animals and plants ; to include all life on earth and beyond as one living entity. In deep ecology, the earth and biosphere are perceived as a total living entity, called Gaia, the name of Mother Earth in Greek mythology. And

beyond that devotional sentiment can be and will have to be extended to include our solar system, our galaxy and ultimately the entire creation. According to Neo-humanism, any limited idea or sentiment will inevitably create problems because human desire is for the infinite. Some day even the devotional sentiment for Gaia that is encouraged by deep ecology will not be enough. Perhaps Arne Naess was thinking of this when he suggested that the name deep ecology should be replaced with "New Philosophy of Nature". How similar this name is to "Neo-humanism".

Neo-humanism is the most expansive human sentiment because it embraces everything in creation. Sarkar explains it as follows: "All molecules, atoms, electrons, protons, positrons and neutrons are the veritable expressions of Pure Consciousness. Those who remember this reality, who keep this realisation ever alive in their hearts, are said to have attained perfection in life... When the underlying spirit of humansm is extended to everything, animate and inanimate, in this universe—I have designated this as Neo-humanism. This Neo-humanism will elevate humanism to universalism, the cult of love for all created beings of this universe."

Now what of the second problem referred to previously, that humanism failed because there was no understanding of how to cultivate the devotional sentiment within it?

The importance of devotional sentiment is that it transforms our sense of worldly existence, an existence that is dominated by dry material objects, dry scientific principles and dry do's and don'ts, into a spiritual outlook in which the universe takes on all the charms of a vibrant and attractive personality. Devotional sentiment exists within all of us, but it is a very delicate and subtle thing. It is like a tender plant trying to grow on a traffic island in the middle of a big city; left to its own devices it will not be able to grow let alone blossom. In just the same way, devotional sentiment has to be cultivated and at the same time protected from the ravages of materialism and hedonism.

Yoga is a system or method to cultivate the devotional sentiment within us. It includes many things—what the Buddhists call right living, meditation for concentration and intuitional insight and the development of a universal culture based upon devotional sentiment.

Deep ecologists stress the importance of living what one believes and yoga stresses the importance of right living. One example of how yogis approach right living concerns eating meat and vegetarianism. There is no doubt that eating meat is bad for one's physical health; modern research has proved this conclusively. But the yogi would go further and say that eating ment is bad for one's mental health; that is, it crudifies the mind instead of making it more subtle. For example, meat (the less cooked the better) is sometimes fed to boxers and soldiers before going into fight in order to make them more aggressive. Paradoxically, the mind also becomes more fearful. An aggressive and fearful mind is not an environment through which devotional sentiment can flow easily. The yogi is as concerned about the effect of food on the mind as its effect on the physical body.

There are many dimensions to the issue of eating meat but obviously the ecological dimension is of concern to deep ecologists. The clearing of the South American tropical forests for cattle ranching is an example. Some 40% has already been cleared and converted into grazing land for cattle. Almost none of the beef produced in South America is consumed by the local people—it is all bought by the United States, and more specifically by the giant hamburger company, Burgerking. The effect of increasing meat consumption in the U.S. is to increase land clearing in the Amazon and the effect of this is the extinction of numerous animal and plant species by the year. It is estimated that by the year 2000 some 50% of the original species will be extinct; that is, lost from the planet for all time. Surely a culture which espouses humanist ideals, as does the USA, yet lives in this destructive way must suffer greatly—and the greatest suffering is that their hypocrisy prevents the flowering of a devotional sentiment within that culture.

The word culture as used here has a special meaning. The word culture is derived from the root verb to cultivate. That is, culture is that which cultivates the finer and subtler expressions of human beings, and through human beings, the finer and subtler expressions of nature. Ultimately culture is that which brings forth the expression of devotional sentiment. It is obvious then that much of what passes as culture in our materialistic society does not deserve the name. In Western countries we are

encouraged, if not impelled to engage in a broad range of totally destructive activities, whether it is eating meat, consuming alcohol, smoking cigarettes, taking drugs or participating in some form of pornography. All these elements of our pseudo-culture are destructive to us individually, but because of our ecological interconnectedness they are also destructive to every living being on our planet. And now that we humans have the nuclear capacity, the suppression of devotional sentiment, whether it be deliberate or through ignorance, threatens the very survival of the planet.

To conclude: Neo-humanism has two essential characteristics that make it the philosophy of the new-age. Firstly it recognises both the evolutionary and the ecological nature of life on earth and meshes the two. In terms of an earlier analogy, Neo-humanism succeeds in meshing the arrow with the circle. Secondly it infuses the principles of deep ecology with devotional sentiment and through the practices of Tantra Yoga, it extends the radius of that devotional sentiment to encompass more and more of our universe. If deep ecology is reconceived as a deepening ecology, then we can see that it is well on the path to Neo-humanism.

Neo-humanism suggests how we can deepen the deep ecological approach. We need to develop an ecology of mind (internal psychic), an ecology of culture (external psychic) and an ecology of body (internal physical) apart from the traditional ecology of nature (external physical). Meditation for instance would be fundamental to any ecology of mind. It can be understood as a form of relaxation or mind conservation. But it is much more than this—it is a means of tuning the individual mind into both the collective mind and the Cosmic Mind. In history to date yoga has been perceived only as an individual quest for the Great; yoga practices and the cultivation of devotional sentiment have had meaning only within the context of a personal relationship with the Great. Neo-humanism is a momentous step in the evolution of life on planet earth because now the practice of yoga and the cultivation of devotional sentiment can be taken up in the collective sphere. It is as if the collective or corporate entity now has the capacity to strive for the Great in a way that was only previously possible for individuals. The corporate entity has come of age.

THE DIALECTICAL MECHANISM IN SOCIETY

Social dynamism is commonly explained in Prout as the result of a dialectical interaction between four classes: the working class, the martial class, the intellectual class and the business or trading class. However, the concept of class in Prout is not the same as that used by Marxists. For instance Prout defines tht working class not in relation to the material means of production but as that collection of people whose psychology is dominated by the material world and who demonstrates no attempt to transcend it. The important innovation of Prout is that the primary action is perceived as occuring in the psychological arena—class psychologies both complement and clash with one another, the result manifesting in the material world. Hence P. R. Sarkar says, "Human history is the history of collective psychology". The class psychologies interact in such a way as to produce a cyclical succession of class dominance—the working class, followed by the martial class, followed by the intellectual class, followed by the merchant class—with the sequence repeating itself indefinitely. Further, the object of social management should be to fascilitate the flow of the social cycle by preventing any one class from holding onto power and using its dominance to exploit the other classes.

While Sarkar's theory of class interaction provides fascinating insights into history, it does much more. It provides a powerful set of conceptual tools with which to analyse all types of social motivity and conflict. These tools include the concepts of dialectical conflict, collective psychology, cyclical alternation of odminant psychologies and the interaction of collective psychology and the material environment. Perhaps, because Sarkar refers only to the class dialectic in "Human Society", there has been little attempt so far to apply his tools of social analysis to other sources of social conflict. There are several dialectics within the collective social consciousness besides class psychology which contribute to social motivity and conflict, the most obvious being thost associated with the psychology of gender and the psychology of race.

This chapter is devoted primarily to applying Sarkar's conceptual tools of social analysis to the gender dialectic. It should be approached by the reader as an experiment in analysis rather than as statement of fact. There is however a message;

if human beings wish to achieve a society free of exploitation and oppression then they must be able to appreciate the many dialectical forces that generate social change and not just the class dialectic.

The Dialectical Mechanism

To a large extent, social motivity is the result of objective forces that are beyond the cognizance of the individuals involved. The great individuals, the famous personalities, are often themselves simply expressions of objective social forces. For instance there are numerous surprising similarities between the ethical systems espoused by Mahatma Gandhi and Martin Luther. Both espoused a work ethic (Gandhi called it "bread labour") in which individual existence is justified by hard work and in which individual consumption should be kept to a minimum. In bread labour Gandhi insisted that one should only consume that which is grown or made with ones own hands. Both preached a form of puritanism in which ones every thought and action requires constant vigilance in order to track down and exterpate all impure and irreligious thoughts and motives. Both ethics were concerned with evil and with physical and mental cleanliness to combat evil. Gandhi and Luther lived at very different times, in different cultures and technologies. Both men lived at a time when their society was in transition from a feudal (intellectual) era to a trading era (capitalism) and both men helped to catalyse that transition. It seems that despite the diversity of circumstances in which the two men lived there were objective social forces which threw up the same kind of dominant personality. While both men insisted they were acting as independent agents, both were submerged in the same class psychology.

According to Prout if we are to understand social motivity and conflict, then it is absolutely necessary to understand the objective social forces referred to above. The fact that they are objective is important because it means that they can be exposed and analysed in a scientific way; the cause and effect of them can be understood. The objective social forces in which Prout is primarily interested have two characteristics; they exist in the psychic realm and they are dialectical.

There are two general principles of dialectics. The first says that all objects and all processes, whether animate or

ánanimate, whether individual or social, contain a unity of opposites. For example, the atom contains positive and negative charges and the human race is composed of female and male sexes. The significant feature of opposites is that there is an attraction between them but also a contradiction. Another significant feature is that opposites exist only in relation to one another; there cannot be a positive charge without a negative and there cannot be one sex without the other. The second principle of dialectics says that all change and all motivity arises out of the struggle between the attraction and contradiction of opposites. The significant point of this principle is that motivity arises from within the very nature of an object and is not something endowed from the outside.

Marxism of course also accepts the validity of these two principles of dialectics but Prout takes them beyond the material level, that is beyond dialectical materialism, and into the psychic or mental arena. Within the psychic arena there exist ideas which are in unity and contradiction to one another. The clash and cohesion between these ideas motivates the behaviour of humans, both as individuals and as classes. Sarkar has explained the dialectical mechanism as it operates in the clash and cohesion of class psychologies. The emergence of a new class is motivated by its desire to overcome oppression and to express its psychic potential.

In the course of this struggle, the emerging class acquires a momentum which propels it into the position of dominant class. However it is in the nature of the dialectical mechanism that the dominant class psychology creates the conditions for its own demise and thereby for the emergence of a new dominant class. During the material era the warrior leaders ruled by virtue of their courage, strength and endurance. To win battles however, they became increasingly reliant on the strategems, guile and diplomacy of the intellectuals. But they also feared the power of the intellectuals and repressed them. On the other hand the intellectuals, once given a taste of their own abilities and strengths, acquired aspirations where they had none before. Thus they rebelled against their oppression. So between the martial class and the intellectual class there is both a complementarity, that is an interdependence, and a clash. But by virtue of the martial class becoming locked into its own weakness, the intellectuals move from strength to strength. Such

is the nature of the dialectical relationship.

It should not be thought that Prout considers social motivity as a purely psychic phenomenon. There is the additional complication of a dialectical relationship between the psychic realm and the material. Ideas in the psychic realm generate individual and class behaviour in the physical world. Changes in the physical world create a feed-back force which generates changes in the psychic arena. But there is a fundamental difference between the matter/mind dialectic and the dialectics of class/gender/race. In the latter cases, the various poles of each dialectic are inherently equal, that is they are equal and opposite, but in the matter/mind dialectic mind has the advantage over matter. In the cycle of cause and effect, the psychological forces have a greater strength and determining power than the material forces. If this were not the case then progress along the path of Pratisaincara would be impossible.

The Gender Dialectic

The gender dialectic is the expression of objective social forces; that is, it is the expression of collective psychologies that are more powerful than the psychologies of the great majority of the individual men and women involved. There will always be individuals who vary from the norm. To these individuals talk of collective psychology appears to be nothing more than cliches or stereotyping. Nevertheless collective psychology is a real and objective social phenomenon and the key to any understanding of social motivity. A more comprehensive discussion of collective psychology follows in the next chapter. In this chapter we are concerned with just one dialectic within the collective psychology, namely the gender dialectic. It will be used as an example of the dialectical mechanism in society.

The gender dialectic can be approached both from the perspective of Eastern psychology and Western psychology. The Eastern approach has already been hinted at in chapter five. In human beings the Attraction of the Great manifests as three different kinds of desire for transcendence: the desire for expansion or Vistara, the desire for harmony or Rasa and the desire to serve or Seva. These three are the innate characteristics or Dharma of human beings. They are what make humans something greater than animals.

Vistara, Rasa and Seva are also the primary aspirations of

the collective mind. They are the motivating forces within social psychology. However it can be readily observed that the expansion principle appears to be dominant in male psychology and patriarchal societies whereas the harmony principle appears to be dominant in female psychology and matriarchal societies. These labels are not applied as stereotypes ; they are observable social characteristics that have their origins in the different collective psychologies of women and men.

The work of psychologist Carol Gilligan as published in her recent book "In A Different Voice" (Harvard University Press 1982) is representative of the Western psychological approach to gender differences. She has observed differences between the sexes in their social and moral outlook which she suggests are both complementary and contradictory. That is they have the hallmarks of a dialectical relationship. Whether these differences in collective psychology between the sexes are the result of social conditioning or whether they are inherited is of course the source of a great debate. Gilligan implies that her observed differences are the result of social conditioning. However Sarkar suggests that a strong inherited component also exists. He states in "Subhasita Samgraha Part 5" that the fundamental psychological difference between men and women is that men move towards the object of attraction in order to enjoy it whereas women attract the object of enjoyment to themselves. He says that the biological manifestation of this occurs during the process of fertilisation in which the motile sperm swims towards the egg drawn by its chemical attractions. Whether sex differences are acquired, inherited or both, it is clear that the psychological differences go beyond superficial conditioning.

How does the gender dialectic manifest in society? Just as there has been an alternation of class dominance due to the class dialectic, so too there has been an alternation of gender dominance due to the gender dialectic. In an essay called "Human History and Collective Psychology", Sarkar argues that so far in human history there have been three eras in the gender dialectic. In primitive, that is, earliest human tribes, males and females had equal importance in the tribal structure. Then followed a period of matriarchy and subsequently a period of patriarchy, which of course still persists today. The remainder of this chapter examines the gender dialectic in the past, in the present

and in the future, and concludes with some observation of how humanity may develop as a species.

The Past

There is a lot of accumulated evidence to suggest that prehistoric communities were matriarchal. According to biologist and evolutionist Professor Nancy Tanner in her book "On Becoming Human", the circumstances bringing this about were inherent in the evolutionary forces moulding the proto-human species. The essence of Tanner's theory is that the strong mother-child relationship of our earliest ancestors placed females under strong pressure to find sufficient food for their young. The mother-child relationship became the focus of the pressures of natural selection and so women were the first to develop tools for plant gathering etc. To appreciate the radical nature of Tanner's ideas they should be compared with the traditional Darwinian account. The proto-human apes, said Darwin, lived as nomadic tribes in which women cared for the young and prepared food in caves while men hunted for food in the forests and savhanna. The main selection pressure fell on the men because those with superior strength and ability to devise weapons and hunting strategies would bring home more food to their 'families' and hence breed more children. In Dawinian theory natural selection acted on men in the process of hunting and women were the fellow travellers of human evolution.

Tanner has turned this traditional account on its head by placing the pressures of natural selection on the mother-child relationship. "The innovation that produced more food would be most likely to occur initially among those on whom there was the most nutritional stress. It is therefore highly probable that it was women with offspring who developed the new gathering technology and that this was the innovation critical to ape-human divergence". Tanner believes that early accounts of human evolution were highly coloured by patriarchal thinking. More recent studies, she says, present a different picture. It will of course be difficult to prove Tanner's theory but it is more plausible than the traditional Darwinian view. Her theory is not necessarily inconsistent with Sarkar's proposal for an earlier 'equal' society because he has given no date for the transition to the first matriarchy. Tanner's theory is consistant with Sarkar's observation that the psychological bonds between the earliest men

and women were weak—men were not even aware of their role in procreation. It is unlikely therefore that they would have returned to their 'family' after hunting.

Sarkar places the emergence of human consciousness at about one million years ago. This is the first appearance of Homo Erectus (Peking and Java Man) who in the course of the next 900,000 years spread around the world and survived three major ice-ages (400,000 years ago, 200,000 years ago and 50,000 years ago). Language was not the pivotal point in human evolution according to Sarkar. Language emerged in the proto-humans 6 million years ago. Language is a measure of intellectual development not of self-consciousness. For instance the advanced Ullus Apes have a vocabulary of about 700 words while some isolated tribes of Africa have just 1000 expressions. The difference is not great. (Bengali has 150,000 words and German 500,000 words).

Homo Erectus gave rise to a number of humanoid species including Homo Sapiens. Homo Sapiens in turn gave rise to various sub species including Neanderthal and Cro Magnon. Both these groups were extinct by 10,000 years ago perhaps due to climatic changes or tribal fighting or both. Our own sub-species divided into four main races—the Aryans in the northern latitudes, the Mongoloids in east Asoa, the Negroids in Africa and the Austrics or Aboriginals in the equatorial belt around the Indian Ocean.

In primitive society males and females enjoyed equal status and subsequently matriarchal society emerged. Sarkar does not offer a date for this transition but he does observe that at some stage the earliest humans who had individualistic instinct began to evolve a collective sentiment. This change must surely have been a precondition for the emergence of a matriarchal society. Sarkar places the transition from matriarchy to patriarchy at 12,000 years ago, that is during the first Vedic Era. What were the circumstances that caused this transition? It is difficult to analyse the events of pre-history but there are several clues.

Firstly the date 12,000 years ago is significant because it coincides with the beginning of the end of the last ice age. The ice caps were retreating from southern Europe and the Middle east, leaving an empty but potentially fertile landscape. The Aryan peoples of Eastern Europe and West Asia most affected by the ice ages became the nucleus for a series of migrations that

took them eastwards into Russia and China, south east into India via Iran, south into the Middle East and Africa, and west into Germany, France and the British Isles. There is no doubt that the Aryans took patriarchal society with them.

There is a wealth of archeological evidence to suggest a connection between nomadic life style and patriarchy. For example in the valleys of the Euphrates, the Indus and the Ganges rivers, the soil was highly fertile due to the warm climate and regular flooding, encouraging the development of agriculture and stable population. In these societies the deities tended to be female. By contrast, the civilisations of the infertile steppes and plains of central Asia developed animal culture and therefore a nomadic life-stylye. The dominant deities of these civilisations were male. In his book "Soil and Civilisation" Edward Hyams claims that because women were better or more temperamentally suited to agriculture, they dominated the economic and social life of their society and as a consequence the ideological and religious life had a female perspective. For similar reasons, male pantheons developed in nomadic societies where strength and assertion of power were social values. In short nomadic life style, if forced upon a human population, would have created the conditions for the emergence of patriarchy.

Secondly, at some stage prior to the Vedic Era, men discovered their role in procreation. In addition under the influence of the Attraction of the Great, there was an increase in the sense of social duty, an increase in emotional subtlety and closer psychological bonding between men and women. Sarkar implies that these were primary factors in human evolution and not derivative of material factors. In these changing circumstances, it is quite likely that men would have pushed for some recognition in the matter of lineal descent and inheritance.

With the awakening of a sense of duty in men, the responsibilities of the mother became somewhat less and she developed some dependence on men during child bearing and rearing. This would have been a progressive step in human evolution since for the first time there was some conscious co-operation between the sexes. However this newly emerging social arrangement gave more importance to the family and therefore proportionately less to the traditional clan system and the matriarchs who led them.

Thirdly it is sometimes asserted that the matriarchy of

ancient times was approaching a utopia, at least by today's standards, and that men seized power motivated only by greed and lust for power. However Sarkar points out that exploitation became no less severe under matriarchy than under patriarchy. This is what we would expect in an unfolding dialectical relationship.

The early matriarchal period would have been beneficial to human evolution but with the entrenchment of matriarchal ideology, exploitation of men would have ensued. In the early matriarchy, courageous and spirited women were recognised as clan leaders. Women would have been primarily responsible for clan structure as a means of supporting one another during child rearing. This collective style of living encouraged agriculture and intellectual development. At this time men would have been the 'fellow travellers'. But the nature of martial psychology is such that prestige and honour are all important. There would have been disputes between rival matriarchs and it is quite reasonable to suppose that men would have been pressed into military service because of their superior strength. In this additional respect women became dependent on men—but more importantly men would have learnt the importance of social discipline and working as a group.

So to summarise, the transition from matriarchy to patriarchy was brought about most likely by a combination of circumstances; climatic changes leading to nomadic life-style; increased familial bonding; and disputes between clans over matters of prestige. Each of these would have served to empower men and reduce the social importance of the matriarchs. Initially women still enjoyed high social status in the martial era, if not power, but this also was eroded during the subsequent intellectual era.

The combination of patriarchal psychology—the desire to migrate, go beyond the horizon, and the assertion of individuality—with martial psychology—the desire to overcome obstacles by strength and bravery—proved to be a potent and frequently destructive combination. The liberating spirit of patriarchy in its early days had, by the dawn of recorded history, turned into domination and oppression. As wave after wave of Aryans migrated to the four corners of the earth, they conquered indiginous peoples, destroying their culture wherever possible and imposing Aryan culture.

The Aryan invasion of the Indian subcontinent began about 10,000 years ago and persisted for several thousand years. It is comparatively well documented since the battles between the Aryans and the indiginous Mongaloid, Negroid and Austric peoples form the subject of some of the world's first literature. P. R. Sarkar describes the differences between the Aryans and the indiginous peoples of India in "Tantra and the Indo-Aryan Civilisation". The Aryan invasions terminated in the south and east of the sub-continent. An historical consequence of this is that some areas of Bengal have retained a strong matriarchal influence even to the present day as exemplified by preservation of the matrilineal system. On this point it is interesting to note that compared with other Indian races, for example the Gujaratis in the west, there has been little migration of Bengalis to other parts of the world. The urge to migrate is less pronounced in matriarchal social psychology.

The conflict between matriarchy and patriarchy produced other interesting cultural conflicts. According to Hyams, Chinese matriarchal society had an aversion to dairy products, most probably as a result of their wars with the patriarchal Tartars who survived by herding cattle. Hyams suggests that the cow might have become sacred in India due to an imposition by the Aryans on the indiginous people.

On the African continent, it would appear that the Aryan migrations terminated in the east, for today we observe that matriarchal influence is much stronger in west than east Africa. Compared with women in some west African communities, who can take over market trading and become powerful in their own right, the access of east African women the wealth and decision making is both indirect and fragile.

The pattern of distribution of matriarchal and patriarchal societies in the world today, or at least the relative strengths of them, suggests that patriarchy was spread with the Aryan migrations and became weaker the further it moved from the Aryan nucleus in east Europe. In more recent times, since the 1500's, a new wave of Aryan migration originating from western Europe has spread around the world imposing capitalism and an even stronger patriarchal social psychology.

This is not to say that patriarchal society is solely an Aryan invention. The pressures generating a patriarchal society would have been existing in many societies. For instance the nomadic

Aboriginals of Australia had a patriarchal and patrilineal society prior to any contact with the Aryan races.

The Present

There are several indications that patriarchal society is on the decline, being challenged by a female collective psychology that is growing in strength.

Firstly, planet earth has finite capacity to cope with the expansion drive of patriarchy. The lands and seas have been explored minutely. Space exploration is the new frontier but the technology is too costly for it to be a significant expression of male psychology. The expansion urge has found other outlets in scientific research, in increasing the gross national product, in taller buildings and in increasing megawatt consumption and export tonnages. But there are material limits and these are being rapidly approached. This extravaganza of expansion has been achieved at a price—the neglect of the internal harmony of human society and planet earth. Hence the emergence of ecology and many healing and caring philosophies. These are the expressions of a new kind of social psychology in which harmony and Rasa are all imporant. Of course men have participated in the emergence of this new social psychology, but the nature of the harmony principle resonates more easily with female collective psychology and will encourage its further development.

Secondly, due to the neglect of its internal harmony, patriarchal society is beset by anti-social and destructive forces. Patriarchal power structures are being undermined by crime, corruption, drug and alcohol problems etc. The life force of patriarchal society is weakening.

Thirdly, the technique of exploitation is to create a dependency of the exploited on the exploiters—for example, the worker is dependent on the capitalist for work. The dependency of women on men in patriarchal society is obvious enough but the dynamics of a dialectic are such that the exploiter also becomes dependent on the exploited, as in the case of the warrior leaders on the intellectuals. So also men have become dependent on women. On an organisational level, the boss who plays golf becomes dependent on his female secretary to maintain efficiency in the office. On an emotional level, the hard striving businessman becomes dependent on the emotional support of his wife. The man as a result develops serious emotional weaknesses that

ultimately affect his ability to work efficiently.

Fourthly, the exploitation of women is becoming more blatant, as in the spread of pornography. The inability or lack of desire on the part of politicians, police and the media to take a sympathetic and effective stand is obvious. These factors heighten the determination of women to fight back. More women are joining the burgeoning protest movements that challenge the status quo. From these movements come future leaders.

Fifthly, there is a revival of women's culture, literature etc. Political liberation is always preceeded by cultural revial, as for example in Czechoslovakia, Ireland and India.

Finally, strength differences no longer have the same social, political and economic significance as they previously did. Automation and computerisation mean that an increasing proportion of economic production involves intellectual and not physical labour. Even military power is becoming more of a push-button affair due to advances in weapons technology. The future belongs to those with intellect rather than physical strength, and intellect is not the preserve of one sex or the other.

The Future

According to dialectical analysis, social forces unfold in a three step sequence : thesis, antithesis and synthesis. Sarkar uses these concepts to analyse the class dialectic and they may also be applied to the gender dialectic. At the present stage of the gender dialectic, thesis is represented by male psychology and is dominant in society. Female psychology represents the emerging antithesis and is being expressed through the growing feminist and women's liberation movements. The synthesis has not of course arrived but we can gain some insights into it by studying the content of the thesis and antithesis.

In general terms we would expect a future synthesis to have a significant if not dominant expression of the harmony principle. In the early stages society would be preoccupied with healing the wounds left by an extravaganza of expansion principle. Society would be organised more in accord with ecological principles. It would be less consumption oriented and more concerned with the quality of life. There would be less emphasis on pushing back the frontiers of science, as in space research and genetic engineering. There would be more importance attached to solving human 'internal' problems as opposed to 'external'

technological problems. In law there would be more attempt to solve disputes through individual approach as opposed to applying impartial principles of justice. Trends in these directions are already apparent, but in a future society these would be dominant trends rather than the reformist or subversive accompaniments that they are today.

There will inevitably be changes in the family system just as there were changes during the transition from matriarchy to patriarchy. The main thrust of these changes would be to remove the material dependence of mothers upon their husbands. It is significant that already in Western countries such as Australia only some 25% of families fit the supposed norm of working husband with wife staying at home to look after the children. The majority of families have either a single parent or both parents working. In either case the mother is forced to do two jobs. This tremendous burden imposed upon mothers is exacerbated by a society which is structured according to a norm which no longer exists. The solution is clearly that child care should become a collective/family/community/state responsibility rather than a purely mother/family responsibility. No doubt the extended family will become an increasingly important social institution since this was how the ancient matriarchal society provided security for women and children.

The question arises as to whether the coming synthesis will be a matriarchal society or whether it will express a perfect balance of female and male collective psychologies. Due to the extreme imbalance in today's patriarchal society, it is most unlikely that a perfect balance can be achieved in the near future. Every action has its natural opposite reaction; so according to an honest and scientific appraisal of the present social forces, we would expect a matriarchal society to emerge out of the coming synthesis. This in turn would represent the thesis for another phase in the dialectic.

However there are two other factors which must be taken into consideration. Firstly, the gender dialectic has an internal tendency to arrive at an equilibrium—that is the dialectic is running down in the same way that a pendulum comes to a gradual halt. Hence the polarisation of the dialectic will gradually become less and the male and female collective psychologies will gradually converge. This in turn implies that the differences between individual male and female psychologies will

diminish. There is some hint of this in Part 25 of "Problem of the Day" where Sarkar implies that advances in reproductive technology will make sexual reproduction obsolete, and the reproductive capacity of the human body will become extinct. Such changes in physical structure would certainly have their psychological parallel. In this situation both social consciousness and social structures (family, education, welfare structures) will be quite different from anything we understand today.

Secondly other forces may emerge in society which reduce the significance of the gender dialectic. Sarkar seems to hint at this in his essay "Human History and Collective Psychology". He says that the power of human intellect will increase so much that sex differences will assume comparatively less importance. There is no difference between the sexes in their potential for intellectual development.

If the gender dialectic does gradually diminish over the coming hundreds or thousands of years, it would be a mistake to think that the human society now has one less problem to worry about! Problems never disappear. Just as the curl in a dog's tail reappears once you let it go, so the gender dialectic may diminish but another dialectic will spring up in its place... perhaps as the result of contact with an alien civilisation.

The Gender Dialectic in Perspective

In human history to date, the play of the gender dialectic has largely been an unconscious process. Expansion and harmony have been blind forces expressed for their own sake. In patriarchy for example, mountains have been climbed because they are there; genetic engineering pursued simply because it represented a challenge. But with knowledge comes power. Now that we have some degree of understanding about the gender dialectic, we can utilise that knowledge to intervene in its unfolding. We cannot of course suppress it; that would be impossible. But we can regulate and fascilitate it so as to move human society more quickly towards the Great. This power of self-determination on the social level is something new in human history. It is both exciting and to some extent frightening—but such is the nature of human evolution. Understanding the gender dialectic will be a part of the skill of social engineering that humans will acquire over the coming centuries.

The object of social management will always be to prevent

one side of a dialectic from holding onto power and exploiting the other. Any attempt to frustrate the natural flow of a social dialectic will result in the accumulation of uncontrollable psychic forces such as resentment, anger and hatred. At any time these pent up forces can erupt to destroy the society. The practical means for the management of dialectical processes, whether of gender, race or class, are discussed at the end of the next chapter.

When one looks at the totality of Sarkar's writings on social management, it is clear that he gives greatest significance to the class dialectic. Of course he writes much about racial exploitation and the exploitation of women under patriarchy for he is opposed to all exploitation. But it is as if he believes that the race dialectics and the gender dialectic will diminish comparatively quickly so that in future years the class dialectic will be of greatest significance in determining social motivity. In his book on Shiva (the great Indian personality who lived some 7000 years ago), Sarkar comments that Shiva did not give any particular importance to the matrilineal, matriarchal, patrilineal or patriarchal social systems. Shiva simply wanted people to grow in a natural way—his main concern was that there should be no exploitation of one group by another. This perhaps expresses Sarkar's own views.

It is also significant that Sarkar does not pose androgeny as the ideal in the fight against patriarchy. Androgeny, the balanced development of male and female psychologies within the one person, is often posed as the ideal means of stepping outside the gender dialectic. While there is no denying the need for men to cultivate a healthy expression of 'female qualities' within them and vice versa for women, it is not at all clear that this is a practical solution to the social problem of patriarchy. While the convergence of the sexes both mentally and physically may be an on going part of human evolution, it will take a long time, perhaps thousands of years, before truely androgenous persons permeate our society in large numbers. Androgeny may be a personal ideal but it is not an immediate practical social ideal. Instead Sarkar poses coordinated cooperation as the social ideal for relations between the sexes.

In terms of social structures and institutions, coordinated cooperation between the sexes means that there must be three kinds of 'spaces' in society. For the proper expression of both gender psychologies a future healthy society will require both

'women only space' and 'men only space'. These will be necessary so that both poles of the dialectic can develop their respective visions for society with clarity and self-confidence. However the highest flowering of human potential will be achieved in the third 'space' where the female and male visions meet. This third space is that of coordinated cooperation. It is in this space that the differences between the sexes accquire a meaning and purpose beyond the merely biological. It is in this space that all the human virtues clash and cohere to produce a universal human society. It is in this space that society advances with greatest speed towards its ideal of social equality and collective welfare.

To summarise the gender dialectic interacts with other dialectics like the class and race dialectics to produce the complexity that is history. The nature of the exploitation of one sex by the other depends upon which class psychology is dominant at the time. Likewise the nature of the exploitation of one class by another will depend upon whether matriarchy or patriarchy is dominant. The gender dialectic cannot be subsumed totally within the class dialectic since it has some independent motivity of its own. Likewise the class dialectic cannot be subsumed within the gender dialectic since it also has independent motivity. The objective of social management will be to fascilitate the flow of each of the dialectics and to capitalise on the interactions between them. There are synergistic possibilities where two or more waves, that is two or more new collective psychologies, emerge simultaneously.

Each particular era or combination of psychologies will express its particular social consciousness and quite naturally build the social structures consonant with its consciousness. The evolution of this consciousness will be dialectical, with pause and speed, but always there will be that irresistable aspiration towards the Great. As P. R. Sarkar notes in his 1985 New Year's message "That very irresistible aspiration which leads humans towards their goal with tremendous speed, also builds all sorts of social structures and generates newer social consciousness. With all sincerity in thought, words and deeds you have to build that aspiration ... you have to awaken the cognitive faculty latent in the innermost golden cavity of every microcosmic mind. For, you have to work to bring about the well-being of every entity ... no benevolent individual can neglect anyone."

THE COLLECTIVE MIND AND ITS PSYCHOLOGY

Why do people keep voting for politicians who obviously do not have their best interests at heart ? Why is there a world wide trend for democratic countries to vote in conservative and reactionary governments even when those governments make no secret of their monetarist policies which leave the majority of people worse off ? Why are young people taking up smoking in increasing numbers when the ill effects are better known than ever ? Why was Coca Cola, that global symbol of capitalist culture, amongst the first Western commercial products to be marketed in communist China ? There are apparently simple answers to these questions. The party which spends the most money will win elections regardless of policies. Advertising is so clever and pervasive that it overcomes rational thinking. But there is more here than the simple answers suggest. A more subtle phenomenon is involved; little known but beginning to attract the attention of historians, sociologists and political scientists, this is the phenomenon of the collective mind.

The purpose of this chapter is to develop a better understanding of the collective mind and its importance in human affairs. Sarkar's writings on the collective mind and collective psychology are a great contribution to the development of the social sciences. For the first time he has developed a comprehensive theory which integrates the collective mind into an account of human evolution, social dynamics and politics.

The origins of the collective mind have already been discussed in previous chapters. It is a natural outcome of the synthetic force in psychic evolution. It began to have a significant impact on human evolution just prior to the emergence of recorded history. Despite being with us so long, only in the 20th century have human beings become aware of the existence of a collective mind. Perhaps because of its materialistic preoccupations, Western science was blinded to such a subtle phenomenon. Karl Jung introduced the concept of a collective unconscious but it appeared to have clinical applications only, and was certainly far removed from the practical world of politics. Historians felt the need to postulate a zeitgeist or spirit of the times in order to understand social motivity. Today

sociologists and political scientists are trying to understand the special nature of collective experience in order to predict political and cultural trends. A major problem however, is the lack of an appropriate methodology in the Western tradition with which to study these subtle phenomena.

From the flow of human evolution so far, it is reasonable to assume that in the future the collective mind will become increasingly important in human affairs. Indeed, the future psychic evolution of humanity may have more to do with the collective mind than the individual mind. We can expect the collective mind to develop in complexity and power perhaps taking on a life of its own. The collective mind will enable more subtle and beautiful human expressions than have ever been possible before. Maybe the collective mind is today at an equivalent evolutionary position to the unit human mind one million years ago.

How the collective mind will evolve in the future is beyond the scope of this chapter. Speculation in this area is the stuff of science fiction novels, although limited extrapolations can reasonably be made. This chapter is more concerned with an understanding of the collective mind as it is today and how this understanding can be helpful in political strategy.

The following points summarise what has been covered in previous chapters. Human evolution has been accompanied by the development of a collective mind which is the result of a synthesis of the many individual human minds and which can be analysed according to its form and function. Human beings are just becoming aware of the existence of the collective mind and this increased self-awareness will surely prove to be a tremendously important step in human evolution. The collective mind is subject to two contradictory forces—a synthetic force and a counterveiling analytic force. The former strengthens and the latter weakens the integrity of the collective mind. Finally, in the natural flow of evolution the synthetic flow is dominant, although at certain times or in certain places the analytic force may become dominant.

The Collective Psychology

The existence of a collective mind is one of the corner

stones of Prout. The collective mind is the mind of the society. The English word society has its root in the ancient Sanskrit word Samaj meaning a group of people moving together. Sarkar says this is the inner spirit of the word society. He says that human beings have not yet been able to establish a society deserving of the name because individualistic sentiments and selfish interests have been too strong. The establishment of a society is dependent on the formation of a strong collective mind.

Sarkar envisages the collective mind and the society as a corporate entity having some independent vitality of its own. But society is also composed of people with individual problems and aspirations. Any social philosophy which ignores this fact and perceives only the corporate entity treads a path to fascism. But the dependence of the individual on the collective mind is also a fact and any social philosophy which ignores this fact treads the path of social disintegration.

By analogy with the human mind, Sarkar introduces the notion of a collective psychology. Collective psychology is to the society what personality is to the individual. The collective mind refers to a mental structure; collective psychology refers to mental colour or behaviour. Sarkar defines the collective psychology as the average psychic momentum derived from the unit psychic momenta. Collective psychology is the fundamental base of the social body, providing it with the vital energy to maintain itself. The society depends upon the momentum of the collective psychology for its strength and integrity.

Analysing the collective psychology

No two human minds are exactly the same—so it is to be expected that analysis of the collective psycholoy will be a complex task. Fortunately human psychology reveals patterns which are also reflected in the collective psychology. On the other hand, numerous small peculiarities and idiosyncracies which colour the individual psychology and make it unique tend to cancel one another out at the level of collective psychology. However, patterns in the collective psychology can be studied using objective and subjective methods as appropriate. Objective methods include observation, surveys, questionnaires, statistical analysis etc. Subjective methods include intuition and self-analysis, but

these will need to become more reliable and acceptable if study of the collective psychology is to progress.

By analogy with the human mind we can expect to discover a conscious, subconscious, and unconscious collective mind. The existence of a conscious collective mind was the discovery of Karl Jung. Jung perceived the collective unconscious as a kind of race memory that we carry from prehistoric times. Sarkar also hints of this: "The darkness of evolutionary night began to fade centuries ago when the first ape-like creatures deserted their three-branch kingdom and shambled out into the light of the plain. They were guided by something they could not understand: something un-ape like.....Time passed slowly. The new creatures developed and multiplied.....New behaviour patterns evolved and after some time, emotions and feelings unknown and denied to all previous forms of life found their means of expression. The Dawn of Humanity was revealed at that auspicious hour. The waves of thought generated by that first human expression vibrate even to this day in the unconscious mind of every human being. Everyone of us carries within us the hidden memory of that first sunrise, and even beyond it into the darkness of antiquity. We are, by means of this primordial memory, which is part of our human heritage, intimately connected to all forms of life". ("Supreme Expression I" p. 328).

The collective subconscious may also be the repository for more recent events in history that we prefer to forget: events such as the extermination of the Aboriginal people of Tasmania which even now is not mentioned in the history texts of Australian schools.

The conscious collective mind is of more interest to sociologists and political scientists since it is this which shapes human affairs in the present. The ideology of a society is part of its conscious collective mind.

Just as individual behaviour is motivated in various ways, that is, by instinct, sentiment, rationality and Dharma, so too is the collective psychology. A mob out of control can be under the influence of collective instinct. All orators attempt to manipulate the collective sentiment of an audience. Most important however, the collective psychology has psycho-spiritual impulses—it has impulses for expansion, harmony and service just as does the individual human psychology.

Where the analytic force is strong, the collective mind is weakened and the collective psychology may be said to suffer a disorder. This idea was also expressed by the American psychoanalyst Eric Fromm, who described the two world wars of this century as crises in the European collective mind erupting into the material world.

To summarise: society is a corporate entity consisting of a collective mind and a material component including an environment, plants, animals, humans, factories, tools etc. The collective mind is the culminating expression thus far in the evolution of life on our planet, and it has conscious, sub-conscous and unconscious components. Collective psychology is the mental colour or personality of the collective mind. It is an average expression of all the unit minds. The collective psychology displays instinctual, sentimental, intellectual and Dharmic traits as does the unit mind. It also suffers disorders.

Six Spokes of Collective Psychology

According to Sarkar, six fundamental factors contribute to the formation and evolution of the collective psychology—ideology, spiritual practices, socio-economic theory, social outlook, literature/images and preceptors. Where any of these are lacking or where they are weak or result in an analytic tendency, then the society will gradually disintegrate.

Ideology includes those ideas and beliefs in the collective mind which give meaning to human life and its social codes. It also provides a rationale for the distribution of wealth and resources. Ideology will to some extent depend on the status of scientific knowledge, on human perceptions of what ought to be and on their previous experience. Sarkar says that in order to be useful, an ideology must be rational, account for all human experience (physical, psychic and spiritual) and recognise the spiritual destiny of human evolution.

Spiritual practices include those practices whereby the individual and the collective come to understand and feel their spiritual destiny. Commonly accepted religious rituals and worship may or may not impart this realisation.

Socio-economic theory is the social, legal and economic knowledge which ensures that everyone gets their minimum neces-

sities of life and enables them to develop their physical, psychic and spiritual potential. If socio-economic theory is inadequate then people will suffer and society will eventually collapse. For example, note the impact of strict monetarist policies in Chile.

Social outlook is primarily sentiments which encourage collective living. Where individualistic sentiment has the upper hand, as in capitalism, then the society will gradually disintegrate. The radius of one's social outlook may be small, including only the local community, or large, including one's nation, religion or race. The only social outlook which can ultimately be justified says Sarkar, is that which encompasses all human beings, and even beyond that to encompass all animals and plants. This is Neo-humanist sentiment.

Literature and images, including speech, are the primary means of communication. It is not possible to have personal contact with vast numbers of people, so most communication is by way of the mass media and advertising. The messages and images portrayed by the mass media shape the collective psychology. Where the media promote self-interest and materialistic values as they do in most societies today, social instability must result.

Preceptors are those rare individuals with highly developed minds who are able to make an impact on the collective mind. Most political leaders do not change the collective psychology—they merely reflect it, or act as a focus or figurehead. Even a powerful personality such as Hitler was as much a reflection of the collective psychology as a sculptor of it. To ask why the German people succumbed to Hitler is to pose the question the wrong way around. Needless to say preceptors must have a strengthening effect on the collective mind if humanity is to benefit from them.

Social Dynamism and the Collective Psychology

Prout contends that social dynamism arises from the interplay of forces which complement and contradict one another. It is because of internal contradictions that things change. Human beings, like all living things, consist of a mind and a body. Mnd is under dominance of the synthetic force and body is under dominance of the analytic force. Thus there is in each human

being a play of contradictory forces which moulds the human personality. Likewise the society consists of a collective mind and a material component as described above. So in society there is also a play of synthetic and analytic forces which moulds the collective psychology. This is the primary dialectical conflict in a society.

But there are other dialectical conflicts which give rise to social motivity. The most important are the dialectic of sex, the dialectic of race and the dialectic of class.

The psychologies of women and men are in certain respects different. These differences generate a dialectical interaction between men and women in which there is both an attraction and a contradiction.

The psychologies of the various human races are in certain respects different. There are four major races, numerous subraces and of course much intermingling. National boundaries also help to create psychological types. Race differences arise partly from varying environmental influences and partly from an accretion of psychic and mystical experiences which become fixed into the race memory or culture. Between races there can develop dialectical relationships as exemplified between the peoples of India and England. The English psychology (indeed European psychology) has a propensity to materialistic outlook and logical linear thinking. Indian psychology has a tendency towards animistic outlook and diffuse lateral thinking. In moral outlook therefore, Europeans are more interested in the results of actions, whereas Indians are more concerned with the motivations behind actions. In cosmology, the English adopt an analytic scientific approach, while Indians adopt a synthetic philosophical approach. The English occupation of India demonstrated that between the two psychologies there is both complementarity and contradiction. The English were finally expelled from India but not before India absorbed some of the English psychology.

Unlike the psychologies of sex and race, the class psychologies have no obvious physical accompaniments. The different class psychologies arise as a natural result of people trying to survive in their envronment; but they are defined by psychological type rather than by their physical relation to the means

of production. The class psychologies both complement and clash with one another in a dialectical fashion.

The three dialectics associated with sex, race and class make the most impact on the collective psychology because they involve huge numbers of people. An examination of history reveals them to be most important; in fact P. R. Sarkar defines human history as "the history of collective psychology".

Dominance in the Collective Psychology

The collective psychology is not just a reflection of all the unit psychologies. Certain psychologies emerge as dominant while others are diminished or repressed. For example today we live in a society in which capitalist ideas and values are obviously dominant and yet in terms of numbers, the labouring class are usually in the majority. There are equal numbers of men and women and yet male psychology is dominant in almost every society on earth. In South Africa, the Negro race far out-numbers the Aryan race, yet Aryan psychology is dominant. The collective psychology reflects not just numbers but the relative strengths of the unit psychologies. In South Africa, Negroid psychology has been only weakly expressed for the last four decades despite the numbers of Negroes, though this unbalance is rapidly changing.

Dominance by any one psychology is never permanent. At one time male psychology dominates, at another female. At one time labouring class psychology dominates, at another intellectual. Similarly with race psychology. The process by which dominance passes from one psychology to another is dialectical. The dialectical mechanism which causes a succession of class dominance has been described by P. R. Sarkar in "Human Society, Part 2". Similar dialectical forces operate in race/culture dominance, but because race psychologies are so complex, no simple description is possible.

While the dialectics of sex, race and class can be teased apart and analysed separately, in reality they interact in complex patterns to create the colourful fabric of history. As a first step in trying to analyse the collective psychology of a particular society, we can examine the gender, race and class components of it. However, to begin with we must make an assump-

tion, namely that there are no interactive effects between the psychologies. That is, we assume that gender, class and race are simply additive, and that if we desire to understand the collective psychology of any society we add together the dominant gender, class and race psychologies as if they were separate. This is the additive model of collective psychology. In reality of course, social relations are much more complicated than this, but this model is still a useful starting point. For example in Western countries, male psychology, Aryan psychology and capitalist psychology are dominant. These three give an adequate description of the collective psychology of Western countries. In Africa, prior to European colonisation, the collective psychology could have been described as the addition of Negroid psychology, male psychology (perhaps female psychology in certain places) and martial psychology.

As an aid in understanding the additive model of collective psychology we may use the graphs in Figure 38. Each of the dialectics has its own cyclical pattern which is comparitively simple. When all three are added however, they create a complex and apparently unintelligible pattern. The more dialectical processes at work, the more complex the pattern. We must not forget however, that the ultimate driving force behind all the dialectics is nothing other than Attraction of the Great. Using a fishing analogy, when an angler castes a fly into the water and winds it in, the fly adopts a spiral motion due to its distorted shape. The more distorted shape of the fly the more complex the spiral path taken by it. But there would be no spiral movement whatsoever but for the linear winding in force exerted by the angler. Likewise a society when

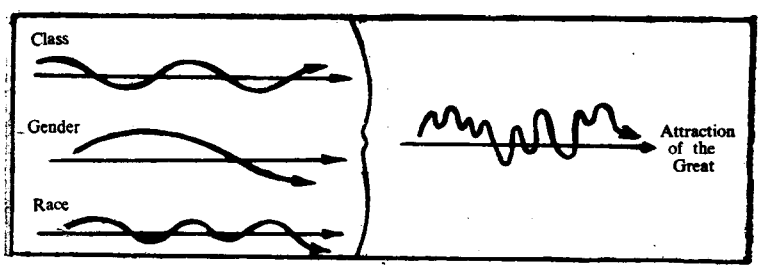

Fig. 38. Additive Model for the Components of the Collective Psychology.

drawn by Attraction of the Great adopts a complex spiral path due to the various distortions within the collective psychology.

Sex, race and class are the obvious sources of social motivity. Another source of dialectical tension is the conflict between the psychology of youth and that of age. Revolutionary leaders tend to be young but as a society matures so does the average age of its leadership. The average age of a community's leaders can tell us something more about its collective psychology.

The additive model of the collective psychology is useful because it allows flexibility in understanding social conflict in different cultures at different times in history. For instance, the Russian and Chinese proletarian revolutions had very different characters reflecting their race psychologies. To some extent Mao consciously adapted the Marxist model to Chinese thinking, just as President Nyerere of Tanzania had adapted it to the African psychology. But there was a significant unconscious adaption. Russian economic planning used a static approach to budgeting, balancing inputs and outputs; the Chinese used a dynamic approach, that is, exploiting contradictions between city and country, farm and factory etc. No doubt the fact that Russia is still stagnating in its second martial era while China has moved on to its second intellectual era and is rapidly moving towards its second capitalist era due to differences in race psychology as much as to material factors.

There is another complexity in the dominance of collective psychology, that of incomplete dominance. In Bengal, India, and in West Africa there is a significant matriarchal influence despite patriarchy being the dominant psychology. For historical reasons, male psychology does not have the same dominance as in Europe or the Middle East. The phenomenon of incomplete dominance also applies to the class dialectic. Russia today is in its second martial era, as evidenced by the dominant power positions of the Army and KGB, yet its collective psychology appears different from what might be expected of a warrior dominated society. Russia's major enemies are capitalist countries and to survive Russia is obliged to match the production pace of its enemies. Therefore capitalist psychology exerts a significant if indirect influence on its collectve psychology. In describing the collective psychology of a country therefore, it

may be necessary to add minor components to the three major components.

In Figure 39, six components of human history have been set side by side on a logarithmic time scale. The transitional periods, between eras of dominance, are only approximate. The point of Figure 39 is not to display chronological data but to show how the complex tapestry of history can be unravelled into it component parts. Each component has to a certain extent its own dynamic, except moral outlook and world outlook which are both linked with collective self awareness. Therefore it is a mistake to set up one component as dominant and causal so demoting the others to a derivative status. There will of course be interactions; the rise of martial psychology was a contributory factor in the decline of matriarchy; and the emergence of individualistic/scientific outlook was a contributory factor to the emergence of the capitalist era.

Manipulating the Collective Psychology

Between the unit and the collective mind there is a two-way flow. The collective mind is obviously determined to some extent by the composition of the unit minds and the unit minds are to a large extent moulded by the collective mind. Because mind is a form of energy, the question of relative strength becomes important. Just as a weak mind can be hypnotised by a stronger mind, so too the collective mind can be subject to powerful forces. Conversely certain strong individuals, such as revolutionary leaders, are able to resist the power of the collective mind and encourage others to resist it also.

Most political leaders, past and present, are reflections of the collective psychology. Those individuals able to create a tremendous change in the collective psychology are rare. Einstein effected such a change through the brilliance of his intellect. Shiva effected such a change through the brilliance of his personality.

But in the 20th century, new possibilities have arisen to control the collective mind. Through its monopoly control of newspapers, radio and television, the capitalist class is able to determine virtually everything that enters the collective psycho-

ilogy. Of course the media also reflect the collective psychology, as in TV soap operas, but because of their capacity to act in unison, the media not only dictate the content of the collective psychology, they create it.

The advertising blitz is another means of controlling the collective psychology. The razamatazz that preceeds the release of a new model car or Hollywood film creates a desire for the products that sweeps like a wave around the community and even the world. Saturation advertising manipulates the forces

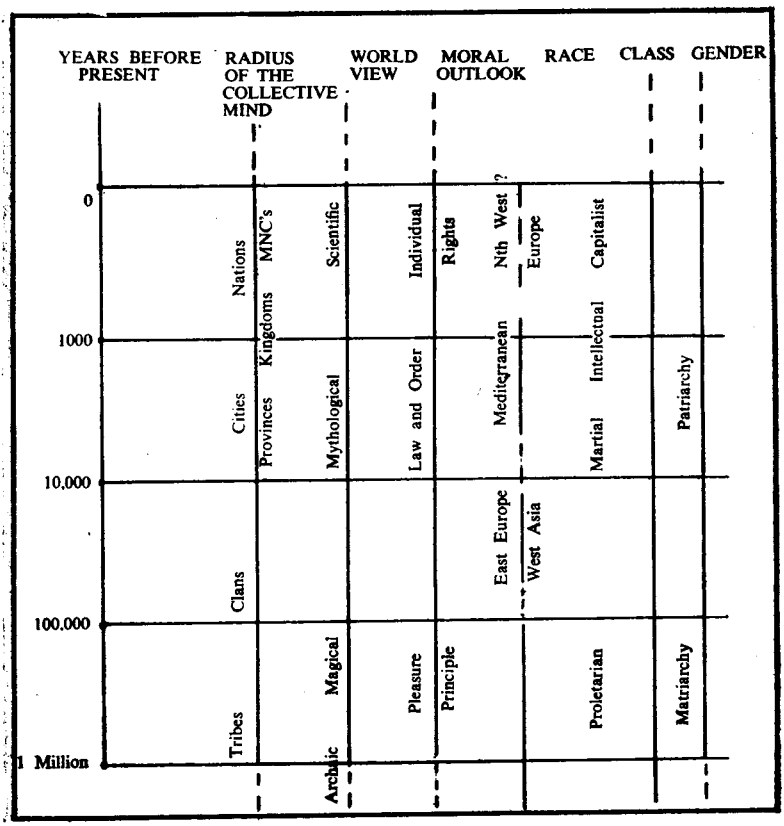

Fig. 39. Some of the Components of Human History

(Transition times are only approximate for European and West Asian history)

of supply and demand by creating a desire for products in the collective psychology which is very difficult for the unit psychology to resist. Where the advertised product is absent, it becomes a highly desirable status symbol. Saturation advertising creates a vacuum which must be filled.

Coca Cola is a perfect example of this phenomenon on a global scale. No other single product or brand has been so heavily advertised around the world. Coca Cola is where life begins; it is the 'real thing'; it is the 'sine qua non' of happiness. Because of the dominance of the U.S. in the world economy, and therefore in the projection of its culture, the Coca Cola message has spread to every nook and cranny of the world, including the communist world. Little wonder that when China dropped its isolationist policies, Coca Cola was an early entry into the Chinese market. Here was a vacuum waiting to be filled.

Tapping into the collective psychology is the ultimate goal of the political candidate. President Reagan's 1984 reelection campaign was possibly the birth of a new era in this regard. His campaign was managed by a computer program which kept up to the minute information on all the issues, survey responses, voter profiles in all parts of the U.S.A. By consulting his computer, Reagan was able to fine tune the content and delivery of his speeches to the local sentiment no matter where he was in the country. Being this in tune with the collective psychology requires access to tremendous amounts of information and control of many communications channels. This in turn requires the kind of money that only the wealthy have. The reward is unparalleled power.

The capitalist class is now in a position to manipulate the content of the collective psychology and to respond to its local variations with great accuracy. No wonder people keep voting for dishonest politicians. Their voting habits are determined by sentiment rather than rationality, and their sentiments are determinded by forces beyond their control. Blinded by a swing to the right in public sentiment, Australian students during the Fraser years permitted the erosion of their own conditions and educational standards. Sentiment is the most powerful force in politics and its locus is the collective mind.

Most people will find this interpretation of politics frighten-

ing. No one likes to think they are so easily manipulated. But it is a fact of life. Rather than close our eyes to it, we must admit the existence and importance of the collective mind. It cannot be banned as we might ban the nuclear bomb. It is not possible to put a wall around the collective mind. Obviously steps must be taken to decentralise media control—but the real solution is to infuse the collective mind with positive sentiments congenial to human welfare. P. R. Sarkar's philosophy of Neo-humanism does just this.

Finally, a link must be made between dominance in the collective psychology and its manipulation. In the natural flow of dialectical conflicts, dominance passes from one psychology to another. However it is obvious that in the transition from say martial dominance to intellectual dominance, there will be a breakdown of the old power structures and the establishment of new power structures and institutions. In order to hang onto power, an entrenched ruling class will attempt to manipulate the collective psychology to secure its own position. In particular, it will promote sentiments which inculcate weakness and inferiority complexes in the psychologies of the oppressed classes. In Western countries for example, the ruling class is characterised by a dominance of Aryan, male and capitalist psychologies. Such a developed collective psychology will therefore attempt to undermine the self-confidence of Aboriginal or Negro people by taking their land and destroying their culture in every possible way. It will undermine women through a spectrum of means from sexist advertising to pornography and rape. It will undermine the other class psychologies by the dual approach of saturation advertising and mystification of the economic process; that is, by creating demands which only the ruling class can satisfy.

All the oppressed groups suffer from discriminatory laws, sub-standard education and detrimental media images. Sarkar describes the technique of weakening the oppressed, as opposed to oppressing the weak, as psycho-economic exploitation. It has reached a peak of sophistication in the present day.

The Role of Sadvipras

The flow of human history to date has largely been an unconscious process. That is, social motivity has been the result

of objective forces beyond the cognizance of the individuals involved. The vast majority of people and even famous personalities are so trapped in the collective psychology that they are unaware of its influence on them. Most people do not understand the social significance of the present—they simply act or react according to their perceived interests. Only later, standing in objectivity, do historians perceive that invisible force, the spirit of the times.

Sarkar envisages that in the future, human social evolution will be a conscious process. It will be conciously manipulated by humans for human welfare. In effect social management will become a science. There are three components to scientific social management; knowledge, motivation and action.

Knowledge : Effective social management is not possible without an accurate understanding of the many social forces at work in society. In this chapter we have recognised the existence of a collective mind which is unfolding from the crude to the subtle to the causal in just the same way that the individual mind unfolds during human development. We have recognised that with the unfolding of the collective mind there is a development of collective awareness; that is, a development of world outlook, moral sensibilities etc. In addition there are other components of history, in particular the dialectics of class, race and gender. But behind all social motivity lies the Attraction of the Great, and social motivity is itself just one aspect of the epic journey of consciousness making its way from matter back to the formless. This then is the broad topography of the social sciences and filling in the detail will be an important enterprise for human beings in the coming centuries.

It must be remembered that the social sciences are quite different from the physical sciences in that the latter are predominantly objective, while the former also have a strong subjective component. The knowledge acquired by physical science does not necessarily alter the internal awareness of the scientist. But the knowledge acquired in the social sciences necessarily changes the self-awareness of the social scientist, and this in turn affects the character of the social knowledge subsequently obtained. For instance, it is an accepted axiom of arbitration that the arbitrator should not take sides if they are to be

effective. So it is that detachment from a dialectic is a prerequisite for understanding and catalysing its deeper mechanism.

Sarkar describes those persons who attempt to expand simultaneously their self awareness and their social awareness, so encompassing both sides of a dialectic, as Sadvipras. He envisages that their numbers will steadily increase in future and that their emergence is of great significance since it is their expanded consciousness which will give the human race the capacity for social management. Gramsci was approaching something of the same concept when he said that the awareness of being part of a determined hegemonic force or developing political consciousness is the first step towards a further and progressive self-consciousness in which theory and practice finally unite.

Motivation : The objective of social management must always be to fascilitate the flow of social motivity by preventing any one class or collective psychology from holding onto power and using its dominance to exploit other social groups. Any such blockage in the flow of the social cycle leads to a build up of repressed social forces which erupt more violently the longer they are repressed.

A Sadvipra necessarily belongs to a particular sex and race and each will have a natural proclivity to one or another class. Yet it should never be the intention of a Sadvipra to establish a particular psychological dominance for its own sake or out of self-interest. The capacity of Sadvipras to be effective in social management arises from their detachment; any emergence of self-interest necessarily puts a person back within the confines of the dialectical process.

This raises the question of identification. Feminists usually describe themselves as women identified and unionists as worker identified. The inculcation of male identification, one of the techniques of patriarchal oppression, cannot be justified since it engenders weakness and inferiority complex in women and superiority complex in men. Likewise identification with capital cannot be justified since it creates the conditions for exploitation of workers. Being women identified can be justified as a necessary defence for women under patriarchy and as a first step in the liberating process. But any narrow identification necessarily carries the risk of becoming superiority complex once liberation is achieved.

Sarkar's solution to this problem is for Sadvipras to develop universal outlook, that is to become identified with Neohumanism. The adoption of this outlook is sometimes criticised because it can be used to gloss over or hide components of oppression in the name of oneness. Sarkar answers this objection in his book "The Liberation of Intellect", where he says that the universal outlook adopted by a Sadvipra is only arrived at after three important steps.

As a first step the Sadvipra adopts an ideological position and affirms the social equality of all human beings regardless of their race, sex or class. Next the Sadvipra analyses the world of practical reality. They observe that there are physical and psychological differences between groups of people that must be catered for. This second step, an analytical step, must be pursued carefully and as far as possible. But it must not be the final step. In the third step, the Sadvipra returns to a synthetic or universal outlook, but this time armed with the necessary practical knowledge to make social equality a reality.

There is a helpful musical analogy. An orchestra whose members say, "I am a violinist" or "I am a flautist" will not produce sweet music. The ideal member of an orchestra says, "I am a musician who happens to play the flute". Of course the flautist must spend a lot of time practising their flute in order to be able to say this. So too, the Sadvipra says, "I am a universalist fighting for the liberation of humanity" or whoever.

Action: Sadvipras are often described as spiritually oriented revolutionaries. The first part of this definition arises from the attempt of Sadvipras to expand both their self-consciousness and their social consciousness and their attempt to cultivate universal outlook. Sarkar says that the mark of a Sadvipra will be self-discipline, according to the highest ethical standards of the time, and the pursuit of self-realisation. Thus the role of Sadvipra cannot be inherited by birth or title, nor can it be acquired through book knowledge alone.

The second part of this definition implies that Sadvipras will not usually hold formal positions of power. Positions of formal power are establishment positions held by those persons who reflect the desires and aspirations of the dominant collective psychology. Sadvipras by contrast, are society's pace-setters or vanguard. Their minds are usually focussed one step ahead of

the current social position and consequently they cause the social cycle to revolve. Sadvipras are social activists who are able to catalyse the smooth flow of the social cycle by virtue of their being detached from that cycle. Detachment in turn comes from the effort to expand self and social consciousness. The former without the latter is impossible.

Opposing Capitalism

It is usually an assumption in Prout commentary that Vaeshyan psychology is the equivalent of capitalist psychology—the former being the Sanskrit term for those dominated by the acquisitive instinct, and the latter its social expression in this day and age. However it should now be apparent that the situation is more complex. In fact capitalism is the unique social expression arising from the combination of three dominant psychologies; Vaeshyan, male and Aryan psychologies. The Vaeshyan component of capitalism is obvious. Vashyan psychology is pre-occupied with the production and distribution of wealth, with the laws of supply and demand and so on. The contributions of male psychology to capitalism are the elements of growth, competition and individualism. These traits are characteristic of male psychology and capitalism but are not essential ingredients of Vaeshyan psychology. The contribution of Aryan psychology is more subtle and difficult to describe. The extroversial, materialistic and linear/logical orientation of the Aryan mind gave rise to a tradition of scientific inquiry and technological advancement which in turn provided the material basis for the expansion of capital. It is most significant that capitalism as we understand it arose only out of the Judeo-Christian tradition and is difficult to perceive capitalism as separate from it.

This additive model of capitalism provides for more flexibility of analysis. It suggests that in another era in another place a Vaeshyan society will appear quite different from contemporary capitalism. The additive model also provides some new insights into opposing capitalism by providing an antithesis to each of its component psychologies. The antithesis to Vaeshyan psychology is the psychology of the disgruntled workers. Contrary to what might be expected, Sarkar does not pose matriarchy as the

antithesis to male psychology, nor does he pose Eastern culture as an antithesis to Western culture. In the former case he poses coordinated cooperation and in the latter case a universal culture in which the physical, psychic and spiritual expressions have an appropriate balance.

The construction of a rival hegemony to capitalism by infiltrating and transforming its media and education institutions has patently failed. Sarkar's strategy is to build new social structures which from their grass roots express a new spiritual and political consciousness. Such new structures are appearing all the time in our community in the form of environmental, feminist, anti-racist groups and many others. Since these emerging groups cannot rely on the orthodox media to project their message, they have to create their own media networks for communication. Several Proutist publications have examined this theme, so the reader can follow up these ideas if they are interested.

SOCIAL THEORIES—GOING BEYOND OPINION

How should we evaluate the basic ideas underlying different social theories? How, for instance, should we treat the capitalist notion that the good of the community is best served by individuals pursuing their selfish interest? How do we judge the Marxist notion that there is no such thing as a fixed human nature or essence on which to support a code of morality? All social theories depend on basic premises concerning the nature of the universe, the purpose of life, the needs of human beings etc. and these ideas form the core of the theory. It is not sufficient to say that one idea is as good as another or that one idea is better than another. There must be some framework with which to assess different social theories and evaluate one set of ideas in relation to another.

In this chapter we deal with the subject of knowledge; the various sources of experience, the pursuit of experience according to certain formal methods and the organisation of experience into theories, whether theories about matter particles or theories about social conflict. In an essay on the general problem of how we judge the worth of a theory, P. R. Sarkar distinquishes two types of theory—those which can be put to practical use and those which cannot. A practical theory is one formulated after careful observation and a thorough understanding of the forces at work in the phenomenon being observed; whereas an impractical theory usually arises where the theory precedes any observation or experience. It should be noted that experience is not limited to sensory stimulation but includes here all types of experience such as intuition and revelation. A theory which arises out of experience and understanding can usually be put to practical use assuming that the environmental circumstances and timing are appropriate. Two or more successful theories can be combined to form a higher order or meta-theory.

The Failings of Theory

According to Sarkar, apparently sound theories can fail for any of four reasons, which he describes as hypocrite's psychology,

theoretician's psychology, inefficiency in the field of application and environmental limitations. Each of these is reviewed in turn.

Hypocrite's Psychology: The cultures and social institutions of most societies are dominated by a ruling class. In Western society, it is the capitalists who dominate and who have a vested interest in the maintenance of the capitalist system. The ideological concepts propogated by this ruling class and by the intelligensia subservient to it are designed simply to maintain their class dominance. These theories are not intended to bring about increased human welfare, although the claim of benevolence will be hypocritically expounded.

The pure, free market, competitive economy has never existed even in the hey-day of 19th century classical capitalism, because it has always been necessary to intervene in the free market system to produce humanly acceptable results. Yet political leaders all over the world praise the free market system as the ideal and aspire to it. More recent ideas such as mixed economy and social democracy are smokescreens of a different type for capitalist exploitation. Those propounding such theories are primarily concerned with fooling people to maintain their own power and prestige, and care little whether or not the theory can be actualized in the practical sphere. Where hypocrites psychology prevails, the validity or otherwise of a theory is not the chief concern, as any set of ideas are seized open and propagated to further the interests of those in power.

Theoretician's Psychology: Many theories develop purely as products of the mind and not from observation or experience. Academic philosophers grappling with meta-physical problems often produce this type of theory. Even if the theory is logically or intellectually sound, it usually has little relevance to the practical lives of people. Aristotle's theory that heavy objects fall faster than lighter objects—a theory he arrived at by reasoning rather than experimentation—is an example of theoretician's psychology.

Inefficiency in the Field of Application: There are some theories which are sincerely motivated and their objectives are based on the observations or experience of their propounders, yet they cannot be materialised due to lack of an effective process. That is, these theories are practical in their conception of a goal or purpose, but insufficient in means. This defect is often found

in many religious philosophies which promote lofty and liberating ideals but fail to offer the practical means to achieve these ideals in social and economic life. How, for example, does one learn to love one's neighbour in a world where the only example is greed and self-interest ?

Environmental Limitations: Finally, there are those theories which are properly motivated and which seem to provide a practical means for their materialisation, but which turn out to be valid only in a particular set of conditions. These theories are limited by changes in time, place and culture, usually because the scope of observation and the experience from which the theory grew were too limited.

Marxism is a theory of this type. Marx was obviously benevolently motivated and he was the first to expose the physical contradictions inherent in the capitalist economy. In addition his theories of dialectical materialism and historical materialism have successfully enabled several nations, notably those with much physical poverty, to overthrow oppressive capitalist regimes. But Marxism has not been able to maintain the progressive movement of most of these societies nor does it fully comprehend the nature of class struggle in post-revolutionary societies.

It is illuminating to look more closely at this defect of Marxism, because as a social theory it initially appears to have all the ingredients for successful application. Marxism contends that theory can only come from practice and as the world changes so must theory. The evolution of Euro-communism from Marxist-Leninism is a good demonstration of this interaction of theory and practice. So where does the problem lie?

The problem is that a successful social theory must be able to accommodate all the realms of human experience. The human personality cannot be split into parts that are isolated from each other, as it is an integrated entity, a totality. All the parts interact with the other parts, hence it is not possible to exclude certain categories of human experience from a social theory if the theory is to be applied in all social situations. The greatest defect of so many social theories is that they exclude certain areas of human experience. Religious philosophies are often unable to come to terms with human physicality, while Marxism has not been able to cope with human spirituality.

The evolution of Marxist-Leninism into Euro-Communism has been an evolution of a theory within the limited framework of materialism, which demands that all psychic and spiritual experience be reduced to material terms. Despite this deficiency, dialectical materialism has been a successful revolutionary theory in those countries where physical poverty has suppressed the importance of psychic and spiritual experience. But where poverty is of a psychic or spiritual nature, as in Australia and the USA, dialectical materialism lacks the necessary conceptual tools to deal with all the social forces involved.

Five Levels of Experience

We now turn to the different types of experience that are the raw material for all human knowledge. This topic forms a branch of philosophy known as epistemology—the study of knowledge. P. R. Sarkar has written various articles on epistemology but unfortunately not all of them have been translated into English, so this section is an introduction to some basic ideas.

The fixation on sensory experience so characteristic of Western science and culture is in fact a comparatively recent phenomenon. The ancient Greeks and medieval theologieans recognised various modes of knowing. St Bonaventura (1221 to 1274) recognised three eyes: the eye of flesh by which we perceive the external world; the eye of reason by which we attain knowledge of philosophy and the mind itself; and the eye of contemplation by which we gain access to transcendental realities. These three eyes can variously be called the sensory/mental/transcendental eyes, the empirical/rational/spiritual eyes or the sensory/symbolic/mystical eyes.

The three eyes recognised by St Bonaventura actually correspond to the three major levels of the human mind: the crude sensory mind, the subtle rational mind and the causal mind. In Eastern psychology, the causal mind is further divided into three levels or kosas, each of which is an eye or level of knowledge and experience.

Any form of experience requires four ingredients: a re-

ceptive organ, a source of stimulation, a tuning device and a witnessing entity. The function of the witnessing entity (Cosmic Consciousness) in substantiating an experience has been discussed previously. The functions of the other three components of experience are discussed in turn.

Each of the five levels or Kosas of the human mind will register an experience when an energy wave of the appropriate subtlety impinges upon it. An experience occurs when a layer of the mind vibrates in sympathy or resonates with the incident stimulating wave. An analogy is the vibration induced in a piano string by an incident sound wave of the right wavelength. In Sarkar's terminology, the Citta takes on the vibrational form of the incoming wave. The higher levels of mind respond only to more subtle incident vibrations.

The crude mind (Level 1) registers sensory stimulation that arrives at the mind via the sense organs, nerves and brain. There are five sense organs and each can pick up a certain spectrum of vibrations.

The subtle mind (Level 2) registers the experience of symbols, ideas, meanings, images, concepts and so on. Level 2 experiences vary in subtlety. They can be representations of physical objects, with the image of a dog, or they can be entirely abstract, such as the concept of the square root of minus one. Level 2 experiences functions as a link between Level 1 and Level 3 experiences; that is, they are psycho-physical experiences.

With Level 3, we enter the causal mind. There is no real distinction between the unit causal mind and the Cosmic Causal Mind; any differences are purely philosophical. Hence any experience in the Cosmic Causal Mind is potentially available to everyone—the experiences are trans-personal. In reality however, a person's experience of the causal mind is usually very limited because they are not tuned to the vibrations of this level. Experiences registered by the supramental mind (Level 3), are purely psychic. They are intuitional in the broadest sense of the word. They include awareness of other people's internal mental states, precognition and the flash of inspiration which appears to come from nowhere. Experiences at this level solve the contradictions and paradoxes of Level 2 and provides the unity behind dialectical conflicts.

This is also the level of artistic inspiration. Wolfgang Amadeus Mozart once described how he created his works: "When I feel well and in good humour, or when I am taking a drive or walk.....thoughts crowd into my mind as easily as you could wish. Whence and how do they come? I do not know and have nothing to do with it...Once I have a theme, another melody comes linking itself with the first one, in accordance with the needs of the composition as whole. It does not come to me successively, with its various parts worked out in detail, as they will be later on, but it is in its entirety that my imagination lets me hear it." Surely this is an example of the Level 3 mind at work without the Level 2 ego being able to claim the credit.

While Level 3 experiences are transpersonal they are not yet spiritual. It is only at Level 4, the subliminal mind, that a person gets the first hint of spiritual experience. The experiences are very subtle and may be thought of as similar to the bliss of Level 5 but coloured by archetypal notions of justice, truth and beauty. The ideas of liberty, equality, Vistara, Rasa, Seva etc. as expressed on Level 2 actually draw their inspiration from Level 4 experience. This is psycho-spiritual experience and it forms the content of many revelations, religious awakenings and inspirational visions. In everyday life, devotional sentiment has its origins in Level 4.

Finally at Level 5, the Hiranyamaya Kosa, the mind registers the subtlest human experience, the experience of oneness with creation or bliss. At Level 5 there is but one experience, unaffected by any limited experience, including the notion of one's individual existence. In all the lower levels of mind the experiences are multiple.

Figure 40 gives a summary of the five layers of the mind and their capacity for experience.

Sources of Stimulation

The Religious Experience Research Unit at Oxford University, England, interviewed thousands of people using carefully designed questionnaires and sampling techniques. They found that at least 36% of people in Britain have had some kind of non-drug-induced religious or transcendent experience at some

time in their levels. In the city of Nottingham, the figure was a staggering 68%. In many cases the experience is that of oneness with creation or of being surrounded by a loving entity. Interestingly, the Research Unit found that such experiences are more common amongst middle class people, with above average education. They are people with non-authoritarian personalities, vitally interested in world affairs, involved in community affairs and who may or may not be religious or believe in God in the traditional sense.

To experience such higher states of mind for any length of time requires a great deal of concentration and careful preparation to avoid any distracting stimulation arising from the lower levels. Yoga and meditation are the practical and scientific means used to achieve this condition, but of course the achievement requires persistence and patience. The problem is that we are dealing with an evolutionary phenomenon. Animal evolution and the early stages of human evolution were dominated almost entirely by sensory experience. Only in the

KOSA		CATEGORY OF EXPERIENCE	SUBJECTIVE EXPERIENCE
Eye of Contemplation	Level 5 Hiranyamaya Kosa	Spiritual	Bliss ↑ Devotion ↑ Intuition ↑ Higher Human Values
	Level 4 Vijinanamaya Kosa	Psycho-spiritual	
	Level 3 Atimanasa Kosa	Psychic	
Eye of Reason	Level 2 Manomaya Kosa	Physico-Psychic	Intellect Thinking Memory
Eye of Flesh	Level 1 Kamamaya Kosa	Psycho-Physical	Sensory Instinctive
	Annamaya Kosa	Physical	Sensory

Fig. 40. The Levels of Mind and Their Experience

more advanced animals and humans does the unit mind experience Level 2 and only humans have developed any concentrative power at Level 2. It is comparitively rare for humans to have developed the capacity to concentrate at Levels 3 and above. However as we continue to evolve, we will acquire more capacity to function at the higher levels. At the present time the majority of human beings are sitting at Level 2 waiting, and in some cases struggling, to break through to Level 3. When this is achieved the transpersonal collective mind will become the most important arena of human evolution.

A Kosa can receive stimulation from a number of sources, in particular from the Kosa one above, from the Kosa one below and from outside of the human mind altogether, that is, from the Cosmic Mind. A wave emanating from a particular Cosmic sphere or Loka will obviously stimulate the equivalent Kosa of the unit mind, but it may also elicit a sympathetic response in the Kosa one above and one below. Thus we now have a rather complicated scheme for source of experience. See Figure 41. In this Figure Jivatman is the witness of the unit mind and Paramatman is the witness of the Cosmic Mind. At Levels 1 and 2 we think logically about sensory experiences and try to give meaning to them. Intense desire to understand will often cause a jump to Level 3 in a flash of inspiration. The physicist trying to grasp the idea of a four dimensional universe, as demanded by sensory evidence, may get a fleeting understanding of the nature of creation from Level 3. Here then we have an example of the upward flow of vibration through the mind. Similarly there can be a downward flow. When a person is in Samadhi, beyond Level 5, the lower Kosas, even down to Level 1, are suspended, but after emerging from Samadhi, the person may feel a subtle tingling in the body and immense bliss in the mind.

The prophetic dream provides an interesting example where the downward flow of stimulation through the mind meets an upward flow. During sleep Levels 1 and 2 are inactive. Let us suppose that in a deep sleep a person has a pre-cognitive Level 3 experience. This experience is passed down to Level 2 where it is clothed in symbols and images and the person experiences a dream. But the images and symbols at Level 2 are derived entirely from Level 1 experience. Hence prophetic dreams need careful interpretation in order to extract the prophetic content

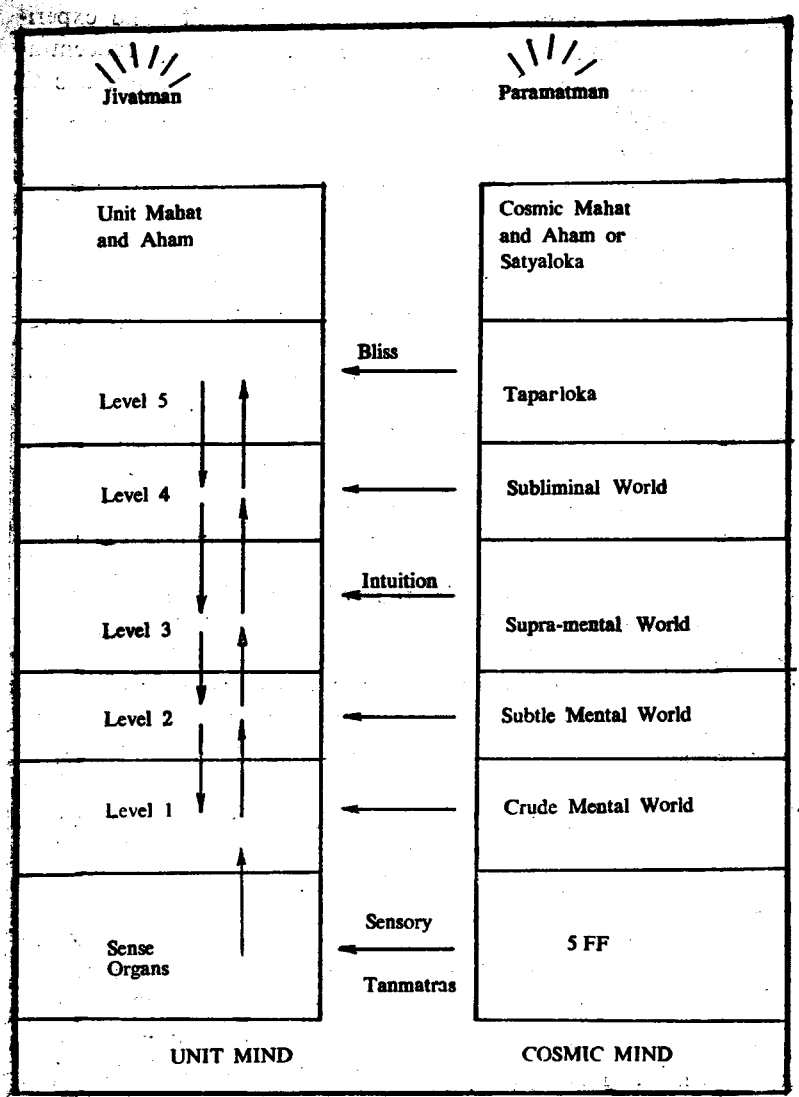

Fig. 41. Sources of Experience for the Human Mind

Arrows show the flow of stimulation to the various layers of the human mind. Each layer is a receptical to vibrations of the appropriate subtlety.

from the superficial clothing of images. Likewise the inspirational dream may require some interpretation. A chemist working on the chemical structure of benzene had a dream of a snake biting its tail. On waking the chemist instantly understood that benzene must have a circular structure. The inspiration of Level 3 had been clothed in an accessible Level 2 symbol.

Arrows show the flow of stimulation to the various layers of the human mind. Each layer is receptive to vibrations of the appropriate subtlety.

The Sciences

Science is the study of cause and effect. If I do this then that will happen. The objective of science is to gain better control of ourselves and the world around us. Conversely its objective is to reduce the scope for chaos. The motivation behind science is therefore the human desire for happiness. There is nothing absolute about scientific method. It evolves out of and cannot be disentangled from human desire. A particular scientific method is arrived at because it is found to produce the desired results—the method is found to be practical.

In the course of history, it was found necessary to evolve different methods to deal with the five different levels of human experience. However all the sciences share certain features in common. Firstly experiences take priority over theory. An established theory will always be adjusted to new experience or data but not vice-versa. Science offers protection against dogmatism. Secondly, in order to have a valid experience, the appropriate preparation must be done for the intended experience. So for instance a physicist must undergo training and prepare the experimental apparatus. A meditator must prepare their mind. Preparation usually involves isolation of the experimental arena from extraneous influences. Finally, in all the sciences a valid experience depends upon it being independently confirmed by other investigators. This is consensual validation or collective validation. It is as much a part of the transcendent sciences as it is of the traditional sciences, assuming of course that all participants in validation have made the proper preparation.

The many scientific disciplines may be classified in several

ways according to subject matter, methodology and so on. Here they are classified according to the Loka studied and according to the unit, collective or Cosmic status of the object of study. This leads to the table in Figure 42.

Serious problems arise where the methodology of one science is applied to experiences of another level. This is known as category error and although not much space is devoted to it here, it is one of the major dilemmas confronting the contemporary sciences. For example, the physical sciences have had a notable lack of success in studying psychic phenomena. A virtue of the physical sciences is precision of measurement but this precision is achieved at the expense of limiting them to a study of those things which can be measured. By comparison, Intuitional Science arrived at the theories of relativity and quan-

LOKA	UNIT	COLLECTIVE	COSMIC
Tapar-loka	Intuitional Science (Final Stage) Surpa-aesthetic Science		Rational Behaviour
Subliminal World	Intuitional Science (Developed Stage) Aesthetic Science		Rational Behaviour
Supra-mental World	Intuitional Science (Primary Stage)		Rational Behaviour
Subtle Mental	Phenomenological Psychology Logic, Maths	Philosophy Collective Psychology Sociology, Marxism Language	Emotional Sentimental Behaviour
Crude Mental	Behavioural Psychology	Economics Military Strategy	Instinctive Behaviour
Material World (5 FF)	Chemistry Biology	Ecology Evolution	Physics Astronomy

Fig. 42. The Lokas and Different Areas of Study and Behaviour

tum mechanics over two thousand years ago but in a descriptive form and not the mathematical form acceptable to today's physicists. Intuitional Science cannot tell us the distance from the earth to the moon; it sacrifices precision of measurement to obtain a breath of knowledge.

The rational sciences such as mathematics and logic are limited in both directions. On the basis of Level 2 experience alone, the rational sciences cannot tell us whether the earth is flat or round. For this sensory data is required. On the other hand neither can rational science prove the validity of transcendent experiences. Any attempt to do so ends up in contradiction. Level 2 sciences are only appropriate to Level 2 experiences. See "Eye to Eye" by Ken Wilbur for more on the problem of category error.

Because the higher Lokas encompass the lower Lokas, so also the higher sciences encompass the lower sciences. This does not mean that a higher science does the same job as a lower science. It means that a higher science incorporates within its sphere of interest the accumulated knowledge of the lower sciences. For instance economics is a sub-branch of sociology but must incorporate an understanding of ecology. Behavioural psychology is a sub-branch of phenomenological psychology but it must incorporate an understanding of human biology.

No systematic methods have been worked out for para-normal phenomena, but there is no reason to suppose that they will not some day come within the scope of a scientific method.

The Positivist Sciences

The sciences associated with the lower two Lokas, excluding the paranormal, have traditionally used a methodology called Positivism. Here Positivism refers to the acquisition of knowledge through positive concrete, sensory, objective experience alone as opposed to the unreliable subjective methods such as dreams and intuition. The methodology of Positivist science developed gradually and was applied long before it was philosophically understood. It is taught in schools as a cyclical process which includes observation, hypothesis/theory, experiment, assessment and then more observation. The method alternates practical activity—observation and experiment—with thinking

activities, hypothesis/theory and assessment. The Postitivist method is summarised is Figure 43.

Sensory experience is a mind Level 1 activity while the storing and processing of data is a mind Level 2 activity. Positivists insist that the jump from data to theory is purely a logical process confined to Level 2. However philosopher Karl Popper has properly shown that in practice scientists rely on an intuitional flash to convert the data into a theory. That is, the synthesising activities of Level 2 mind are dependent on some input from Level 3. Positivists are curiously reluctant to acknowledge the importance of Level 3 input into their scientific pursuits !

Nature must be approached in a thoughtful, even devious manner before it reveals its secrets. Nature hides behind three veils: the relativity of place, the relativity of time and the relativity of person. Nature appears to be different depending on the angle of vision, the time of observation and the psychological predisposition of the observer. Positivist science attempts to solve the problem of peering through the veils by looking at nature from many different angles, at many different times and through different observers to achieve consensual validation. Einstein was able to reconcile the relativities of time and space into one relativity or veil.

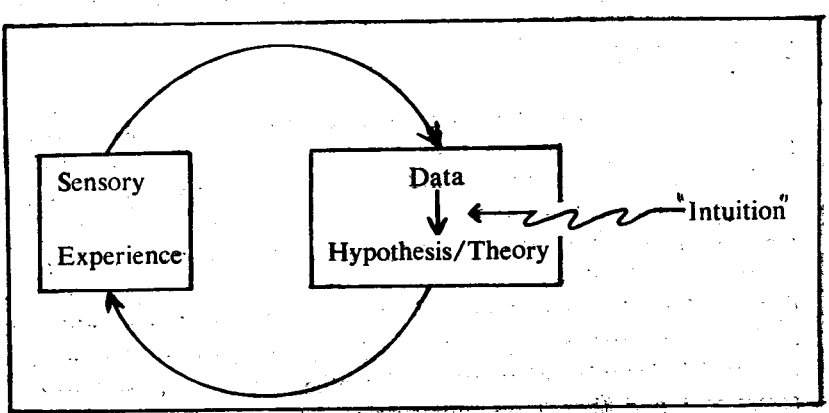

Fig. 43. Postivist Methodology

The advantages of Positivist science are several—it uses precision of measurement and hence is able to make precise predictions about the behaviour of matter; it uses precision of communication, the language of mathematics; it has proved capable of unifying many diverse material phenomena which in turn has allowed rapid technological advance.

But Positivist science also has severe limitations. It cannot deal with non-sensory subjective experience which is an essential part of human life. It is purely descriptive and is incapable of bestowing meaning, values or moral worth upon that which it observes. Finally its attempts to peer around the relativity of the observer and is frequently not much more than a conspiracy. Positivist scientists tend to think the same, can fool themselves as a group and may be divorced from their subjective experience, exemplified by their reluctance to acknowledge the creative input of Level 3 mind. Theodore Roszak called this the "tryanny of objective consciousness'.

The attributes and limitations of the positivist sciences account for their remarkable achievements and for their dismal failures. The strict circumscribing of positive science in what it can and cannot accept has resulted in an extremely disciplined code of study with tremendous power to investigate and control the material world. At the turn of the 20th century the Wright brothers had not yet made their epic 59 second flight in the Kitty Hawk. Less than 70 years later humans were walking on the moon. This is a remarkable achievement. But the success of Positivist science in the technological field has led to the wildest category errors. Rather than remaining as a pragmatic tool to deal with the physical world, positivist methods became a dogma applied to all higher levels of experience. The self-imposed limitation that positivist science can only deal with sensory experience became an ideological prescription that all experience other than sensory is invalid. When applied to psychology and economics where subjective phenomena and value judgements are all important, Positivism proves disastrous.

Because of its excesses, there has been something of a backlash against the Positivist sciences. However P. R. Sarkar makes the point in many essays that the physical sciences must always be encouraged because proper application of them is of great benefit to all life on earth.

Besides the Positivist sciences, Marxism also provides a theory of knowledge which is known as dialectical materialism. The methods of dialectical materialism are summarised by Mao-Tse Tung in the following passage: "Where do correct ideas come from ? Do they drop from the skies ? No. Are they innate in the mind ? No. They come from social practice, and from it alone; they come from three kinds of social practice, the struggle for production, the class struggle and scientific experiment. It is people's social being that determines their thinking. Once the correct ideas characteristic of the advanced class are grasped by the masses, these ideas turn into a material force which changes society and changes the world... At first, knowledge is perceptual. The leap to conceptual knowledge, that is to ideas, occurs when sufficient perceptual knowledge is accumulated. This is one process in cognition. It is the first stage in the whole process of cognition, the stage leading from objective matter to subjective consciousness, from existence to ideas... Then comes the second stage in the process of cognition, the stage leading from consciousness back to matter, from ideas back to existence...Often, a correct idea can be arrived at only after many repetitions of the process leading from matter to consciousness and then back to matter, that is, leading to practice to knowledge and then back to practice. Such is the Marxist theory of knowledge, the dialectical materialist theory of knowledge."

The dialectical combination of practice and theory is called praxis. Praxis may be represented as a cyclical process. See Figure 44. Figures 44 bears an obvious similarity to the positivist cycle. There is the same alternation of sensory activity and thinking activity and once again there is an unacknowledged input from Level 3 mind, this time disguised as the principle of transformation of quantity into quality. However there are all important differences. The thinking activities, the leap from perceptual knowledge to conceptual knowledge and the knowledge itself have no existence independent of matter. They are simply language metaphors which we use to describe chemical reactions and neuron impulses. The creative leap or the transformation of quantity into quality is not a property of mental processes but

inherent to matter. Any attempt to ratify the thinking activities is a mistake, says dialectical materialism.

More important however, is the inclusion of five principles of "correct thinking" into the cycle. Mao obviously places great importance on extracting the correct ideas from the cycle of praxis and this is dependent upon the observer making the proper preparations which include imbibing the five basic principles of dialectical materialism. This description of the basic principles is adapted from "An Introduction to Dialectical Materialism" by Edward Conze.

Principle 1. Matter alone exists and knowledge of matter can only be acquired through sensory experience. Corollary: matter exists independently of human opservation. Says the French Marxist Althusser, "Dialectics is a process without a subject". Matter is one and sufficient unto itself. There is no subjective factor, no witnessing entity. Ideas and consciousness which are seemingly subjective do not in reality exist. They are merely figures of speech. A proper analysis of language, said the Italian Marxist, Gramsci, can exorcise the illusion of their subjectivity.

Principle 2. Things must be studied in their inter-relationships. An object can only be understood properly when seen in relation to other objects. In isolation it is meaningless. A tiger can only be understood when seen in relation to its environment, food chain, other tigers etc. Corollary: universal ideas

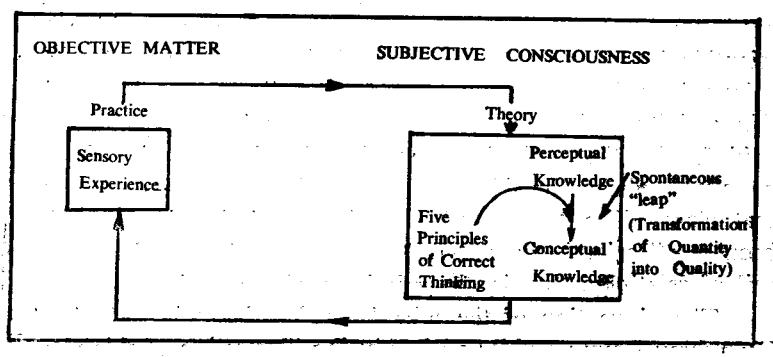

Fig. 44. Praxis—the Combination of Theory and Practice

such as freedom, justice, truth have no meaning. There are no archetypes. There are no ideas in isolation.

Principle 3. Things must be studied in their movements. An object can only be understood by looking at it through time. Corollary: there is no human Dharma or fixed human nature. Humans are matter in motion. Second corollary: there is no directional component to evolution, no Attraction of the Great. Evolution is matter changing.

Principle 4. All objects and processes are a unity of opposites. For example atoms contain positive and negative charges; there is a balance of growth and decay in living organisms. The important feature of opposities is that they exist only in relation to one another. There could not be a positive charge without a negative charge.

Principle 5. All change is the result of or caused by contradiction. That is, all motion arises out of the contradiction between the opposites that are within an object. Corollary: there can never be a state of motionlessness.

Principles 1, 2 and 3 are principles of materialism; principles 4 and 5 are principles of dialectics.

Despite its defects, dialectical materialism represented an advance over positivism in at least two respects. Firstly it recognised scientific activity as a social/collective process, not restricted to an elite of scientists in their laboratories. Secondly it brought social psychology and social dynamics within the scope of scientific investigation. Marx critised positivist science as individualistic and as an ideological tool of the capitalist class to further its own ends. Today we also recognise that there is a patriarchal content to Positivist science. The recognition that scientific investigation takes place within a social system and is coloured by that system was a significant discovery. Since scientific activity within a capitalist society is directed by and paid for by the capitalist class, the direction of scientific progress will always be ideologically consistent with the needs of that class. The process of collective validation is of no help because all scientists are looking at the world through the same veil of relativity, that is, the relativity of the capitalist class.

The invention of the miner's safety lamp in 1815 by Sir Humphrey Davy provides an interesting illustration of this phenomenon. The saftey lamp was hailed as a great invention respon-

sible for saving the lives of thousand of miners. But a recent investigation of accident statistics revealed that there were as many gas explosions in the 50 years after the introduction of the miner's lamp as in the fifty years before. Furthemore, more miners died after the introduction of the lamp than before. This apparent anomaly can be explained by the fact that miners using the safety lamp were forced to take more risks. They were pushed by management into shafts that would not previously have been worked. The so-called safety lamp was not a technological advance designed to save lives but a device to extract previously unavailable coal. This is a clear illustration of positivist science advancing the cause of the dominant class. In exactly the same way, advances in medicine, and particularly reproductive technology, reflect the interests of men rather than women. These are not cases of science being taken out of the hands of the scientists. The problem is inherent to scientific enterprise; science takes place within and helps to create a sociological environment.

The second advance of dialectical materialism over Positivist science was to bring social psychology and social dynamics within the realms of scientific investigation. Marx was one of the founders of sociology as a scientific discipline. Social institutions, ideology and class conflict become things to be understood in terms of cause and effect rather than to be accepted as God-given.

The realisation that social dynamics could be investigated and manipulated was something very exciting to the early 20th century revolutionaries such as Lenin and Mao. Here at last was a scientific approach to revolution. Liberation did not have to be left to chance and revolution was much more than chaos. Something of the excitement can be detected in Lenin's and Mao's extravagant praise of dialectical materialism. For example, Lenin argued that: "The teaching of Marx is all-powerful because it is true. It is complete and harmonious, providing people with a consistent view of the universe which cannot be reconciled with any superstition, any reaction, any defence of bourgeoise oppression. It is the lawful successor of the best that has been created by humanity in the 19th century—German philosophy, English political economy and French socialism." (Lenin, "The Three Sources and Three Component Parts of

Marxism V19", 1913). Quite apart from the finality of this statement and his restriction of the best of humanity to three European countries, what is significant here is the bald claim that Marxism is true." In a similar vein, Mao stated: "Marxism-Leninism is held to be true not only because it was so considered when it was scientifically formulated by Marx, Engels, Lenin and Stalin, but because it has been verified in subsequent practice of revolutionary class struggle and revolutionary national struggle. Dialectical materialism is universally true because it is impossible for anyone to escape its domain in their practice."

On the truth of Mao's statement rests the entire edifice of Marxism. Let us take his statement and analyse each of its three claims separately. Each of them can be shown to be dubious if not wrong. First the claim that dialectical materialism was scientifically formulated. Marxists claim that dialectical materialism, as a method and the body of knowledge derived from it, is entirely scientific. That is, it depends only on sensory experience and not on assumptions or ideas in isolation. However if we look closely at the five principles of correct thinking that are an essential ingredient of dialectical materialism, we find them to be assumptions or to hide assumptions. For example, the first principle that matter alone exists is a pure assumption. What sensory experience can prove the truth of this statement? Its corollary, that matter exists independently of human observation, is also an assumption. It was also an assumption of physics until the advent of Quantum Mechanics. So here is an assumption that has been proved wrong. Principles 2 and 3 are valid in so far as they apply to matter, but their corollaries hide the assumption that denies the validity of transcendent experience. What sensory experience can invalidate transcendent experience? Finally, the dialectical principles deny the possibility of a motionless or non-polarised state. Again what is the justification for the dismissal of Consciousness with a stroke of the pen?

In his book "Essays on Self-criticism", Louis Althusser attempts to deal with these problems. How can dialectical materialism claim to be completely scientific and objective if it grows out of certain fundamental assumptions which are nothing other than ideas in isolation? Marxists reject the possibility of

ideas of isolation but depend on five of them to catalyse the cycle of praxis. Althusser admits that Marxists have first to accept the truth of certain "minimum generalities" in order to get dialectical materialism under way. But he insists that once the scientific process has gathered momentum, it no longer depends on the "minimum generalities"—rather like an airplane requiring wheels only for take off. This is a very dubious piece of reasoning which borders on trickery. Just as a seed crystal sets the shape for the larger crystal which grows around it, so too the body of knowledge accumulated by dialectical materialism will be completely coloured by the "minimum generalities" upon which it grows.

To Mao's claim that dialectical materialism was formulated scientifically, we may reply that dialectical materialism grows out of certain ideas in isolation, one of which actually denies the possibility of ideas in isolation. Mao's second claim is that dialectical materialism has been verified in subsequent revolutionary practice. In a previous section of this chapter on environmental limitations, we observed that Marxist revolutionary praxis has only been successful in countries where social circumstances were dominated by poverty. It has yet to prove itself in a developed country. Mao's second claim must therefore be treated with reserve.

His third claim is that dialectical materialism is true because no one can escape its domain in their practice. If this is true, it is only because dialectical materialism arbitrarily coopts all the subtler and transcendent experiences of human beings and reduces them to matter. Even the ordinary experiences of the conscious mind are reduced to matter. Says P. R. Sarkar, in an essay "Art and Science", "There are certain defective philosophies which think that the material world is everything. When matter becomes everything, then matter becomes the goal of life. And consequently, human existence, human consciousness, subjective portions of the human mind, everything will become like earth and stone." Elsewhere he concludes that is why such a philosophy is detrimental to human development. So we may reject Mao's third claim on the basis that human beings do step outside the domain of dialectical materialism when they have transcendent experiences which are not derivative of matter.

To conclude this discussion of dialectical materialism, we must acknowledge Marx's great contribution in the opening up of the social arena to scientific investigation. However his work was limited because the scientific method he chose was dialectical materialism. Materialists have no tools with which to penetrate the causal layers of the mind, hence they have no means of understanding the integrated human being or the integrated society. The more materialists struggle to understand the real nature of things in the absence of the transcendent, the more they distort the very thing they try to understand.

The Transcendental Sciences

P. R. Sarkar distinguishes two types of knowledge: transcendental knowledge and non-transcendental knowledge. The primary characteristic of the former is that it inspires individuals and society to move along the path of Prati-saincara. Transcendental knowledge draws its inspiration from Cosmic Consciousness. The ultimate object of transcendental knowledge is to merge the subjective portion of the human mind with Cosmic Consciousness. Non-transcendental knowledge says, 'if you do this then that will happen'. Its statements are open ended and without any quality of beauty or justice. Transcendental knowledge says, 'If you do this then you will move closer to your nucleus, Cosmic Consciousness.' This is directed and purposeful knowledge. Non-transcendental knowledge is directionless and may or may not help to bring the society or the individual closer to Cosmic Consciousness. Transcendental knowledge does not ignore the existence of sensory (Level 1) and rational (Level 2) experiences but it says that these experiences in themselves do not assist in spiritual development unless they are accompanied by transcendental knowledge.

Transcendental knowledge arises out of the practice of Intuitional Science. In spiritual philosophy, Aesthetic Science and Supra-Aesthetic Science are considered part of Intuitional Science. Intuitional Science is performed in the laboratory of the mind and the experimental procedure includes the various techniques of yoga and meditation. These techniques are outlined in chapter ten in the section on Astanga Yoga. However, it is not the intention of this book to go into the techniques of

Intuitional Science, as they can be learned from a qualified Acarya of Ananda Marga. Also see several volumes of "Subashita Samgraha" by P. R. Sarkar which are a treatise on Intuitional Science. Intuitional Science is the key whereby a person can enter the three layers of the causal mind, and hence it is a necessary accompaniment to the practice of Aesthetic Science and Supra-Aesthetic Science.

Aesthetic Science is concerned with the cultivation of beauty, truth and pleasure in the worlds of forms, colours, sounds, words, lines and rhythms. Practice of it brings increasingly clear experiences of those universal ideas which dialectical materialism dismisses as false. The desire behind Aesthetic Science, says Sarkar, is "to get joy and to give joy to others". The inner secret of this science is to recognise that everything in creation is Consciousness. "The excellence of the Aesthetic Science lies in the fact that one derives joy from the manifold expressions of Cosmic Consciousness. From the aesthetic point of view there is no other entity but Cosmic Consciousness." ("Salutations to Lord Krshna", P. R. Sarkar, p. 210).

In addition Aesthetic Science says that it is not enough that I should get joy from Cosmic Consciousness. I desire also to convey that joy to everyone else. Traditionally this desire has been expressed through poems and songs and other forms of artistic expression. However Sarkar says that Aesthetic Science means much more than the creation of inspirational art. The notions of justice, freedom, equality, humanism and Neohumanism also come within the jurisdiction of Aesthetic Science. "There is joy indeed in launching a struggle against injustice and that joy is part and parcel of Aesthetic Science". ("Salutations to Lord Krsna" p. 229). But success in the struggle will be impossible without arousing social consciousness. Hence Aesthetic Science must incorporate within its influence a system of social science. This in turn will incorporate a science of economic welfare which must in turn incorporate a science of ecological welfare. Aesthetic Science does not exist in isolation; it incorporates within it the lower level sciences, but the lower level sciences are meaningless and directionless except within the umbrella of Aesthetic Science. Aesthetic Science inspires an ideology which filters down to the lower levels.

Aesthetic Science is Intuitional Science expressed in the

realm of art, literature and culture. In Aesthetic Science the objective world reflects into causal subjectivity (the subjective unit mind) and symbolisation takes place. However, Supra-Aesthetic Science is Intuitional Science pinnacled in the endeavour to realise Supreme Consciousness. In Supra-Aesthetic Science the causal mind reflects into the unit consciousness or Jivatman and spiritual progress is achieved through supra-aesthetic expression.

In Supra-Aesthetic Science there are but two entities, you and Cosmic Consciousness. There are no complications, no multiplications of experience—there is just one experience, the irresistible attraction of Consciousness. Many objects and many people have attractive qualities but none has the drawing power of Consciousness. Cosmic Consciousness is the focal point, the pivotal point of Supra-Aesthetic Science. P. R. Sarkar noted that: "This universe of Cosmic Consciousness has been moving along the path of Prati-saincara. The more it advances on the path of Prati-saincara, the sweeter is its expression because it comes nearer to the nucleus of the Cosmic body. Birds and animals are more beautiful than bricks, stones or wood, and human beings are more sublime than birds and animals. The human mind is full of tenderness, softness, sweetness and other qualities of the divine flow. No other creature is as sublime as human beings, because no heart other than the human heart has such subtle sentimentality. The human heart is sweet because its sentimentality is sweet. And as the human heart is sweet, the human mind is also sweet. ...That is why the inner expression of Cosmic Consciousness in the human ectoplasmic world is decidedly more sublime..." ("Salutations to Lord Krsna" p. 240). Just as an angry child in the arms of a loving parent becomes soft and tender, so human beings reflect the sublimity of the Cosmic Personality as they draw nearer. The Cosmic Personality says, "Come along, come to Me. You will have to come. For too long you have been playing. Now come and sit in My lap." Nobody can resist the charms of Cosmic Consciousness; they are irresistible. Even the person who gets but a glimpse cries out, "My eyes are saturated with the joy of Your beautiful forms. My mind is full of Your qualities. Every part of my body is yearning to join with you".

Supra-Aesthetic Science is the science which draws a person

close to their beloved. It is, says P. R. Sarkar, the supreme science, the raison d'etre and the culmination of all the other sciences. We begin this chapter by asking the question, "How do we judge the worth of a social theory ?" The answer is now surely clear. Social theory must accept the validity of human transcendent experience. It must recognise that human evolution is directed and meaningful. It must recognise that ultimately all human desires revolve around Cosmic Consciousness. It must recognise the value of both transcendent and non-transcendent knowledge and not militate against either. It must recognise the value of each of the sciences without engaging in category error. And finally and most importantly, any social theory must be judged by its ability to move society and human beings and all plants and animals along the path of Prati-saincara. Such movement can only take place on a broad and integrated base.

HUMAN CONSCIOUSNESS

The words 'conscious' and 'consciousness' are used in many different contexts and their meanings can vary accordingly. For example: conscious mind, subconscious, unconscious, self-conscious, political/social consciousness, class consciousness, revolutionary consciousness, dress consciousness, consciousness raising, altered states of consciousness and Cosmic Consciousness.

In everyday usage, consciousness means "an awareness of" —that is, an awareness of some particular process or aspect of reality. In Eastern philosophy, consciousness refers not only to "an awareness of something" but to the Entity which is aware, that is the Witnessing Entity. Materialistic philosophies reject the notion of a Witnessing Entity as something distinct from the material and regard it as an artifact of language. They use the word consciousness only in the narrower sense. In this chapter we look at consciousness in some of its various contexts and compare the Marxist and Proutist notions of consciousness.

Altered States of Consciousness

Traditionally altered states of consciousness (A.S.C's) are associated with the peripheral world of drugs, saints, mystic, artists and yogis. Until recently it would not even have been thought appropriate to establish a link between A.S.C's and socio-economic theories such as socialism or capitalism, but as any person who lived through the 1960's and 70's will know, a veritable intellectual revolution has happened. These decades were marked in particular by first the coming out, so to speak, of large numbers of people who said "we see the world differently", and secondly by the popularisation of the most recent thinking in psychology, theoretical physics, mathematics and Eastern philosophy, all of which challenged our view of the world inherited from the 19th century. However while A.S.C's are by no means a discovery of the 20th century, and those who have experienced them, both in history and today, are comparitively few, the intensity of the experience and the indelible impression they leave on the human personality testify to their validity.

The term "altered states of consciousness" is usually reserved for transcendent experiences associated with higher levels of mind and should be distinguished from psychic phenomena. The latter may arise where a person can extend their mental activity into the Cosmic Mind. They also arise where a person develops unusual powers of concentration; that is, they can keep their mind focused on an otherwise normal experience for a long time. Psychic phenomena are concerned primarily with mental energy and power but the part of the mind which wields that power is still the Aham/ego. Altered States of Consciousness on the other hand are concerned with various modes of perceiving reality that transcend the Aham/ego. It is the attachment to ego that can make psychic powers so dangerous.

Both capitalist and communist countries have rejected and even persecuted those people who claim to experience ASC's. Consciousness research threatens the status quo within society. On the other hand both ideologies have supported psychic research because it has military significance and the potential for social control.

A.S.C's are not equivalent to the Marxian concept of class consciousness. A.S.C's include class consciousness as a specific type but are not limited by class. Some A.S.C's appear to exist independently of and can be shared by persons of diverse cultural and economic backgrounds. Some A.S.C's are intense transcendent experiences that may last for short periods of time. Class consciousness on the other hand is neither quickly acquired nor easily lost.

We must also distinguish between A.S.C's and religion. Religion can be analysed in terms of founder, beliefs, priesthood, ritual and the socio-economic order it justifies etc. There may or may not be in a religion some element of Intuitional Science and practice. Intuitional Science is different from beliefs because it arises out of investigation and experiment, and intuitional practices differ from ritual because it is a behaviour actually resulting in experimentally verifiable A.S.C's.

In the East, the distinction between religion and Intuitional Science has been preserved to some extent, as n the difference between Hinduism and Yoga. But in the Semitic traditions (Islam, Judaism, Christianity) there has been no real history of

scientific or objective, systematic study of A.S.C's as natural psychological phenomena. There has been no separation of Intuitional Science from dogma or of practice from ritual. Belief was a prerequisite for participation, not vice-versa. The more practical Eastern traditions, however, have always stated that the investigation and understanding of A.S.C's is an integral part of being human and they have taught many practices to overcome the psychological blocks that prevent a person expanding their consciousness.

Historically, Western culture has prevented the wider occurence of A.S.C's for several reasons. The unscientific nature of its religions and the exploitative dogma that priests were necessary as an intermediary between people and God have discouraged widespread spiritual experiences. Religions have inculcated a feeling in people of helplessness towards change and invalidated any non-church mediated A.S.C's. As well, the prevalence of poverty and disease amongst all but the upper classes precluded, until recently, the free development of human potential on a wide scale. While the 17th century Scientific Revolution and the 18th century Age of Enlightenment were crucial periods for the liberation of the Western mind from superstition and dogma, the confusion caused by religious fanaticism and the poverty of the majority of people led the great intellectual revolutionaries of the time to regard A.S.C's with superstition and to only endorse a process of rational inquiry. The 19th and 20th centuries inherited a tradition of science limiting the acquisition of knowledge to ordinary consciousness—that is, sense perception and logical inference—and today science and materialism are almost synonymous. The predominance of materialist ideologies in today's world, including both capitalism and communism, is not so much the result of an arrival at some final truth, but rather the product of a certain set of historical and social factors.

Modern discoveries in physics, maths and psychology, together with the spiritual discontent in wealthy industrialised nations, are forcing people to re-examine their materialistic heritage. The Marxian and materialistic rejection of religion on the grounds of social justice and intellectual honesty may be valid but the concommitant rejection of A.S.C's with all their implications is not. A.S.C's have been rejected mainly because

of the West's historical confusion of religious dogma with Intuitional Science, and because Western culture and science is almost completely ignorant of the existence of Intuitional Science. It has demonstrated very little interest, to date, in endeavouring to understand or assimilate this area of human experience.

Both capitalism and traditional socialism see human fulfilment in purely material terms. Materialism is equated with everyday consciousness, and materialistic science believes that all investigation, indeed all living, must be performed in everyday 'concrete' consciousness. Therefore any human experience that is not directly attributed to the sensory control of the conscious mind is invalid or abnormal. The view of human nature arising from such a limited understanding of human experience and potential is at best incomplete, and at worst thoroughly distorted. It is responsible for all sorts of shortcomings in all spheres of individual and collective life. For example, it gives rise to spiritual ignorance and poverty, intellectual bankrupcy, cynicism, social and environmental destruction and consumer orientated economies. The investigation, acceptance and integration of A.S.C.'s into Western, especially socialist thought, is a vital part of dealing with all manner of social problems, and an important step in checking, both philosophically and morally, the excesses of materialism.

Traditional socialism opposes Intuitional Science because it has dogmatised Marx and thus will not change from a position which confuses religion with Intuitional Science. Marx never specifically condemned spirituality, though he was unequivocal in his hostility to religion. Capitalism, on the other hand, opposes Intutonal Science because it threatens the purely materialistic view of human nature which is the foundation of its economic and political exploitation. The wider recognition of A.S.C's would therefore fight capitalism at its roots by showing that human potential and fulfilment transcends our material and animal origins, and free traditional socialism from its dogmatism and prevent the reoccurence of the intellectual and spiritual persecutions that have been a feature of some socialist regimes.

More importantly, perhaps, a wider acceptance of A.S.C's would radically alter the way we perceive ourselves as human beings, and also effect our understanding of society and the universe. The experience of A.S.C's prove the existence of

states of consciousness that are non-material, where the established rules of conscious sensory perception and logical inference do not apply. In addition, A.S.C's as experienced through Intuitional Science reveal the existence of a state of Pure Consciousness where the normal limitations of mind no longer exist. Pure Consciousness is beyond the qualification of the mind, while ASC's are usually attributed to the higher or more subtle levels of mind, levels which are not usually fully active during every day activities.

Intuitional science bridges the gap between the lower and upper levels of mind. It permits the experience of the higher levels for longer periods so there can be no doubt about the validity of the experiences. A view of reality emerges in which matter and mind are seen to be nothing but metamorphosed Consciousness.

Political Consciousness

Marxism has been pre-eminently successful in analysing the defects of the capitalist system and has provided the inspiration for many successful struggles for liberation. But Marxism's ability to incorporate a convincing analysis of human subjective experience, mind, consciousness etc. has not been so successful. Valerie Voloshinov, Marxist philosopher, for instance admits that: "Marxism faces the difficult problem of finding an objective but also subtle and flexible approach to the conscious, subjective human psyche over which, ordinarily, methods of introspection claim jurisdiction !

Because Marx's philosophy has evolved since his death, it is necessary to distinquish between Marx and Marxism. Marxism is now a pluralistic tradition, but it seems that the European Marxists, the school of Euro-communism, have struggled most with the problem of human consciousness. In this section a brief description of a Marxian "subtle and flexible approach" to human consciousness is attempted. Since Euro-communism is itself not a monolithic philosophy, this attempt to draw a thread of argument that conveys both the substance and flavour of the Euro-communism approach to human consciousness is likely to disturb some purists. I hope however, that this section will serve to illustrate several points clearly.

In their exposition of human beings and human activity, Marxists attempts to avoid abstractions and meta-physical concepts and keep to concrete observable facts. From this angle, they talk not about 'human beings', but about the known collection of individual humans that collectively constitute an animal species. They observe that this species works creatively and cooperatively in the satisfaction of its needs and hence the species consists of rational, social animals. This constitutes the starting point for many aspects of Marxist philosophy including human consciousness—simply that people are physical organisms with needs. By starting point, they mean that this is an assumption that needs no justification because it is obviously an inherent truth behind all our experience.

It is important to note that Marxists, or at least the Eurocommunists, do not espouse crude materialism. They do not for instance, agree with the mechanistic philosophers or the capitalist theories who argue that human needs are dominated by survival and pleasure. Human needs, say Marxists, arise out of their concept of themselves, and hence these needs will be emotional and spiritual as well as physical. But whatever the need, Marxists assume that it can only be satisfied by some manipulation of the person's natural or social environment. That is, emotional and spiritual satisfaction are ultimately derivative of material causes. In their endeavour to work their needs out of the environment, humans come up against the opposition of nature. Nature, however does not yield submissively but must be wooed, extolled, moulded and tamed.

The primary distinguishing feature of humans as an animal species say Marxists, is that they use tools and work cooperatively in order to satisfy their needs. The technology and cooperative effort used by humans at any one time, referred to as the mode of production, is the most basic determinant for any study of humans, especially human consciousness. The mode of production is a scientific description of humans satisfying their needs in a contrary world.

Accordng to the Marxist picture of the universe, matter and motion are inseparable and therefore both humans and nature are constantly changing, or there is a tendency to change. An obvious part of the change in the mode of production has been the development of language, logical reasoning and art etc. which

may be called 'signs'. 'Signs' are tools used by humans to communicate and convey information. Any sign consists of two aspects. For instance the picture of a hammer and sickle has an obvious material aspect, that is, it consists of ink on paper, but it also has an added dimension in that it reflects some other aspect of reality and can induce emotions which ink and paper alone would not. The first aspect of a sign is its sensory quality, the second is its meaning. But only the material sign has any real existence. The meaning does not exists in any real sense. (Now how this differs from Eastern philosophy which says that meaning is a real thing, that is, a vibration in Level 2 of the mind).

Signs by their very nature are a product of social interaction and social interaction is the result of the demands of production, so here is an intimate relationship between signs and the mode of production. In particular, signs are a product of the mode of production of a community of people and cannot possibly be understood in isolation from them. Furthermore, because signs are rooted in matter, there is a dialectical interaction between signs and matter and between signs and people. A sign is not an individual creation; it survives only because it has a social value in that it helps satisfy human needs.

There are two types of signs—external and internal. External signs include works of art, words on paper, sounds in the air and so on. Internal signs are not so easily dealt with. All of what we call our internal experience, our thoughts, our emotions etc. can be thought of as internal signs. Inner experience can only exist in the material of signs and therefore scientifically there is no leap or qualitative difference between internal signs and external signs. The material of external signs is sound vibrations, ink and movement etc. The material of inner signs is anything occuring within the human organism, but science shows that the most complex of our internal experience occurs in the brain, and therefore the brain is the substance of most internal signs.

In this Marxist analysis, the human mind is nothing more than a collection of signs, that is, neuron connections, chemical reactions etc., carved out of the brain. Human consciousness is nothing more than a description of the scope and type of such signs. It is clear from this picture why Marxists assert that

individuality, a concept in which the individual is supposed to consciousness arises out of, and is in the last analysis determined by, the mode of production. Consciousness is embedded in the material world and has meaning only in relation to it.

According to Voloshinov, there is no barrier between consciousness, the world of inner signs, and ideology, the world of outer signs. They have the same meaning but just have a different material form—like the words 'two' and 'deux' which mean the same but have a different material form. What complicates our understanding of the relationship between ideology and consciousness according to Voloshinov is our concept of individuality, a concept in which the individual is supposed to have some independent existence from society.

The individual, as an independent possessor of thoughts, and having an isolated consciousness, is purely a socio-ideological phenomenon. In fact every sign, whether internal or external, whether ideological or part of consciousness, is social. It is a collective human creation. An inner sign has no meaning except in relation to all the other inner signs of all other individuals. Therefore consciousness is not the attribute of an individual but of the society. Introspection is the attempt to understand the relation between signs. Individuals exist only as unit physical bodies but their minds and consciousness are no more separate from the collective consciousness than the air in an open jar is separate from the air around.

The term used to describe the sense of separateness that the illusion of individuality engenders is "alienation". The sense of our separate existence or individual self, which some religions call the "soul", is merely a faulty mode of thinking that we have come to call common sense because of centuries of conditioning. Quite simply, say the Marxists, the notion of an eternal soul suited the purpose of centuries of tyrants in their labour of exploitation. It made people feel vulnerable.

The purpose of all Marxist theory and practice is that it provides the means by which humans can break down their alienation. Ernest Fischer for instance, says that "the dream of the whole person is the unifying theme of all of Marxism". In the endeavour to satisfy their needs, humans must overcome the resistance of nature and the result is an "appropriation" of nature. This appropriation occurs by way of scientific inquiry

and the end result is that humans build up a construction of internal and external signs which are a description of reality and also a reflection of reality. That is, nature becomes internalised into human beings. Not only nature but also all other human beings can be internalised in the same way because all signs are interconnected with all others. In effect the world for any individual person can be divided into two; that part which has been internalised, with which the individual feels continuity, and that part which remains yet apart and alien. According to Marx: "The more a person is able to take possession of the outside world—through their senses, their spirit, their intelligence—and the more integrated and many sided this taking of possession, this 'appropriation' is, the greater is their chance of becoming a whole person."

Fischer argues that many commentators overlooked the fact that when Marx speaks of this 'all-inclusive' appropriation and of the 'person endowed with all senses', he in fact means a creative act, an artistic act in the broadest sense of that term—that, for Marx, love was an essential form of such 'appropriation'. In a world of possession, of commerce and profit, this humane act has shrivelled into the act of having. The true art of love for Marx is the progressive appropriation of another person such that two consciousnesses merge to become one. The opposite of love is alienation. Alienation is that experience of separateness, of isolation, of not belonging. Alienation is not however, the natural state of human beings. Rather it is a state of consciousness induced by the mode of production forced on people by the capitalist system. The mode of capitalist production shapes consciousness and capitalist relations emphasise the freedom of the individual, the right of private ownership and so on. These material facts become incorporated as signs into the consciousness of capitalists and workers alike and are the very origins of alienation. The process of becoming whole, of appropriating nature, is the process of overcoming alienation. To become established in a unity with matter, to incorporate the universe within our material consciousness, is the ultimate expression of a persons labour.

We have now come the full circle. In understanding humans, Marxism begins with the established fact that people are material organisms with needs. People satisfy these needs

by appropriating them from a resistant external world. The labour of satisfying these needs gives rise to social cooperation through the medium of signs and by internalising these signs, consciousness develops. This movement or development is progressive and people's needs appear to be unsatisfied except by the appropriation of all of nature, that is, to overcome all resistance. The ultimate development or expression of people's need would be unity of consciousness with the real material world. Here however we must introduce the Catch 22. Matter is forever changing, the real world is forever changing, therefore it is impossible for the unity of consciousness and matter to ever take place, for there must always remain an interval between a change in the world and its incorporation into human consciousness. And just as this is achieved, the world would have already passed on its merry way. People are thus doomed to live with a need that can never be satisfied. People's appropriation of nature through their labour can never be complete.

The highest achievement of human consciousness in Marxist philosophy is political consciousness. The highest political consciousness is that which recognises that matter and the modes of production will ever remain in a state of flux, and that humans will ever remain in a "process of becoming". The supremacy of political consciousness in Marxist ideology is neatly revealed in a 1972 comment of Madame Mao, now the disgraced Jiang Qing of the gang of four. "Sex", she observed, "is initially interesting but what really endures is political power. I want to maintain my political youth forever." One wonders what she was thinking as she sat in prison awaiting trial for her 'crimes'. In this revealing comment, sex may be taken as a symbol for Level I consciousness. Unlike the traditional materialists, Marxists do not confine human beings to this level. Political consciousness belongs to Level 2. It is an awareness of the play of cause and effect in social affairs. Since by definition, no action, sign or meaning occurs outside of a social context, political consciousness is seen to be the ultimate, all embracing, highest level of consciousness. Class consciousness, revolutionary consciousness and so on are just different levels or arenas of political consciousness. To have class consciousness is to have an awareness of the social forces which mould the circumstances of one's class. This awareness comes

about through 'praxis', the combination of theory and practice which is Marxist science.

The more subtle human capacities, the creative act, the artistic act, the art of loving, which Brahmacakra philosophy recognises as 'higher order' experiences, are in Marxism reduced or collapsed into Level 2 political consciousness. But more importantly, the only source of inspiration for Level 2 comes from Level 1, that is all the subtle experiences of human beings are ultimately derivative from matter. Indeed Level 2 mind does not even exist in reality. It is just a mode of speech, an artifact of language.

We are now in a position to compare the role of consciousness in Marxism and Prout, the political aspect of Brahmacakra philosophy.

Consciousness in Marxism and Brahmacakra

There are several points of similarity between Marxism and Brahmacakra. Both philosophies claim to be all encompassing bodies of knowledge; in particular they provide a description of the human condition and the human acquisition of knowledge. The concept of struggle is common to both. The evolution of human consciousness is seen to be a product of the human struggle to overcome obstacles or the resistance of nature. "Struggle is the essence of life", P. R. Sarkar has said. Both philosophies recognise that the motivation to undertake this struggle comes from humans perceiving that they have needs and deficiencies. Both philosophies recognise that human development arises out of dialectival clash; for instance the dialectical clash between mind and matter, between the exploited class and the exploiting class and between theory and practice. Both philosophies recognise that the human mind arises out of material processes and both recognise that the material world and the mental world are is constant motion.

There remain however, fundamental differences between Marxism and Brahmacakra. First, although Marxism and Brahmacakra both recognise the dialectical relationship between mind and matter, "in the last instance", to coin a phrase of the French Marxist, Louis Althusser, matter is the predominant factor for a Marxist. Mind remains embedded in matter. In

spiritual philosophy, however, matter is embedded in mind. To the spiritualist, this manifest material universe does not lead an independent existence. It is moulded out of a more subtle substance, the Cosmc Mind, which is perceived as a living, intelligent entity. The difference between mind and matter is only the difference between steam and water. The problem that most people have in conceiving of mind as an independent substance is that it cannot be perceived with any of our physical senses. In fact, the intelligence, wisdom and emotions characteristic of humans are possible only because they exist latent in matter. And they exist latent in matter because matter is metamorphosed mind substance.

Still, mind is not the ultimate substance. Mind and matter are both finite and in constant motion, but they are the product of and embedded in a motionless and infinite entity, traditionally known as Cosmic Consciousness. Here Consciousness is used in the spiritual sense to mean the subjective factor of the universe, that is, the Witnessing Entity of the objective factor which is mind and matter. Consciousness is the ultimate resting place, the ultimate goal at the end of the path of Prati-saincara.

The inclusion of Cosmic Consciousness in Brahmacakra philosophy is justified by the existence of Altered States of Consciousness whose content is not derivative from matter. Through the practice of the higher level sciences such as Intuitional Science, Aesthetic and Supra-Aesthetic Science, it is not only possible for human beings to appropriate or internalise nature and other people, in the Marxist sense, but it is also possible for a person to merge their unit mind with the Cosmic Mind and their unit consciousness with the Cosmic Consciousness. These conditions of being may legitimately be called 'higher' because they are experienced as being all-inclusive or all-embracing. Of the greatest importance is that this ultimate state of consciousness leaves the individual with no residual sense of need or deficiency. There is no Catch-22 which condemns the individual to forever chase a fulfilment that cannot be quite achieved. The eternal hunger for equilibrium of matter, mind and consciousness is finally quenched and can only be quenched in Cosmic Consciousness. Hence Cosmic Consciousness is the final resting place for the individual, the final release

from the ceaseless motion of material and social existence. In Eastern philosophy it is known as Moksa or salvation.

The approach used by Marxists to achieve the highest dynamic state of political consciousness is to pursue a science of objectivication. A problem or obstacle is analysed from all angles, according to Gramsci, "by methods of philosophy and criticism" in an attempt to overcome the relativity of the individual. A spiritualist uses a seemingly paradoxical approach to overcoming the relativity of the individual. Says P. R. Sarkar, "If you want to know all, know One. That One is your inner 'I' ". The end result of exploring the 'inner-I feeling' is to discover that the so-called self or soul is not an illusion or a product of conditioning but nothing other than Cosmic Consciousness. The painful illusion of separateness, or alienation, is a result of thinking that ones 'I-feeling' is a different entity from any other peoples' I-feeling'.

A Practical Approach for the Realisation of Consciousness

In the section on Dharma in chapter five it was stated that knowingly or unknowingly human beings are running after limitlessness. When they knowingly try to attain the Great and focus all their mental energies to that end, that bearing is called Dharma and the effort united is the practice of Dharma or Dharma Sadhana. Only human beings can perform Dharma Sadhana because of their developed mind and nervous system. The eight stages of Dharma Sadhana, called Astanga Yoga, are the practical means for the realisation of Cosmic Consciousness. Astaunga Yoga forms part of Tantra, the theory and practice of spiritual realisation.

As already mentioned, Dharma is the unit characteristic or orientation of an entity, or the expression of its essential nature. The nature of fire is to burn—fire and its thermal value cannot be separated. Similarly in spiritual philosophy the nature of human beings is to attain infinite bliss, to merge their individual consciousness into Cosmic Consciousness. This is the Dharma of human beings, their innate characteristic and goal and purpose in life. The highest fulfilment of Dharma is complete absorption is Supreme Consciousness.

Dharma is very different from religion. Religion is

ritualistic, devoid of any spiritual practices, based on blind faith rather than rational understanding, and perpetuates a feeling of separateness or dualism between the adherents and God. Religions propagate divisive social sentiments derived from dogma and believe in the superiority of one teaching over another. They have caused untold sufferings in the world—crusades have been carried out in the name of God, heretics have been burnt at the stake, and wars have been waged between intransigent fanatics. Religious institutions are hierarchical, wealthy and more aligned with vested interests than the poor and needy they supposedly serve. Religions have proved themselves chains around the neck of humanity rather than agents of peace, goodwill and understanding.

Dharma is inextricably linked with spiritual morality. Spiritual morality is not the goal of life but a starting point, an essential prerequisite, from where the aspirant can progress to greater spiritual knowledge. By following principles of spiritual mortality the aspirant establishes a mental foundaton for the proper practice of meditation. Through moral conduct the spiritualist can focus and channel the mind towards subtle realms and thereby acquire spiritual knowledge.

There are two aspects of spiritual morality called Yama and Niyama—meaning abstinences and observances respectively—and each contains five principles. The Yamas are more concerned with the subjective side of moral conduct, while the Niyamas concentrate more on the objective side. The five Yamas are Ahimsa, Satya, Asteya, Brahmacarya and Aparigraha. The five Niyamas are Shaocha, Santosa, Tapah, Svadhyaya and Iishvara Pranidhana. The Yamas and Niyamas are the first two limbs of the Eight Fold Path of Astaunga Yoga and are outlined below.

Ahimsa means not causing suffering to any harmless creature by thought, word or deed. Many people incorrectly translate this principle as non-violence and give it a pacifist connotation. Ahimsa does not oppose the use of either individual or collective force to correct injustice or end exploitation.

Satya denotes action of mind or use of words with the intention of helping others. It can be translated as benevolent truthfulness. The spirit of Satya is to think and act for the welfare of others, even if a literal interpretation of the facts is

not strictly observed. People's welfare is the prime consideration, and if this conflicts with factual truth, then welfare should take precedence.

Asteya means non-stealing, and this includes physical stealing and the mental act of stealing. Stealing is of four types—acting to steal; conspiring to steal, but not actually stealing; depriving a person or group of their due; and conspiring to deprive a person or group of their due. The important aspect of Asteya is that both the thought and act of stealing are considered the same thing.

Aparigraha involves non-acceptance of those amenities and personal comforts which are superfluous for physical existence. It can be interpreted as non-luxurious living and reducing one's own living standard out of sympathy for suffering humanity.

Brahmacarya means to experience the presence of Supreme Consciousness in every physical and psychic objectivity, and occurs when the individual mind flows in resonance with the Cosmic Mind. Brahmacarya has been misinterpreted as celibacy, but it actually means seeing the Cosmic Entity in all expressions of creation.

The first principle of Niyama is Shaocha, which denotes purity of both the mind and the body. Mental purity is attained through benevolent deeds and selfless service, while physical purity requires personal hygiene, including the cleanliness of one's immediate physical environment.

Santosa means mental contentment. It implies ungrudingly accepting the results of one's own physical and mental labour and having a sense of mental ease in all the different predicaments of life.

Tapah involves efforts directed at spiritual attainment even when those efforts are associated with physical discomfort. It requires the mental preparedness to willingly undergo hardships to serve others and achieve spiritual progress.

Svadhyana means studying scriptures and inspiring literature and assimilating their inner meaning. It also involves the practical application of the spiritual knowledge one has acquired.

Iishvara Pranidhana is the auto-suggestion that each and every being is an instrument of Supreme Consciousness. It requires implicit faith in Supreme Consciousness irrespective of

whether one lives in happiness or sorrow, prosperity or adversity.

The third branch of Astaunga Yoga is Asanas. These are innercises which normalise the hormonal secretions of the glands and create balance and harmony in the mind. Asanas are the central aspect of the school of Hatha Yoga, commonly called Physical Yoga. There are over 50,000 asanas and mudras. P. R. Sarkar has collected together 42 basic Asanas and 13 different mudras or physical movements which subtlify the human body, balance the secretions of the glands and assist meditation.

Pranayama, the fourth branch of Astaunga Yoga, means the science of breath or control over inhalation and exhalation. Shiva, some 7000 years ago, was the first person to give a systematic science of breath control and teach breathing as part of Tantric meditation. P. R. Sarkar has followed this tradition and made Pranayama a lesson in his meditation system. Breath means life, and practitioners of meditation have long known that control over breath means control over the vital forces in the human body and control over the mind itself. By setting a rhythmic breathing pattern and combining this with spiritual ideation, all the vibrations of the body and mind become attuned to Supreme Consciousness.

Pratyahara is the science of sense withdrawal and means controlling the objective, extroversal tendencies of the human mind and focusing them within. Through the process of withdrawal and subjective channellization, the mind gradually loses its infatuation with the external world and develops the capacity to concentrate, unflickeringly, on sublime spiritual thoughts.

Dharana is deep concentration. In this state the mind is concentrated on a single point and ideates deeply on Supreme Consciousness. In the practice of Dharana the use of Mantra is essential. A Mantra is a set of syllables that has a specific acoustic root and vibrational tone which infuses it with immense spiritual power. A Mantra is repeated internally with the total concentration of the mind, usually in time with breathing. By ideating on the spiritual sgnificance of the Mantra the aspirant reaches a state of subtlety and transcendence, where the mind is filled with divine bliss.

Dhyana is a state of meditation. It occurs after deep concentration when all the mental energies are ensconced in the

object of ideation and completely immersed in divine contemplation. It is the deepest stage of meditation and the stage before Samadhi or spiritual union.

Samadhi occurs when the individual mind attains the straight line vibration of Supreme Consciousness, enabling the unit mind to merge in Consciousness. All vestiges or egoistic dualism are transcended in a state of mystical oneness with God.

Astaunga Yoga or the Eight Fold Path of Yoga was first systematized by Patanjali over 2000 years ago. P. R. Sarkar has revived and clarified these practices to meet the modern spiritual needs of humanity and made them an important part of his Tantric meditation system. The regular practice of Astaunga Yoga is the means through which people can realise more and more of Cosmic Consciousness in their daily lives.

Three Stages of Neo-humanism

Neo-humanism was introduced in chapter seven where it was stated that through the cultivation of devotional sentiment, Neo-humanism extends the underlying spirit of humanism to include every created thing whether animate or inanimate. Neo-humanism elevates humanism to universalism. It embraces all the subtle sentiments, feelings and expressions of the individual and uses them to strengthen the collective life ; it propels society forward on the path of Prati-saincara. Thus Neo-humanism provides the link between individual life, social life and Cosmic Consciousness.

Sarkar explains that there are three stages in the establishment of Neo-humanism that correspond to the individual, collective and Cosmic levels of existence. The first stage is spiritual practice which is the cultivation and purification of each of the five levels of the individual mind. This is achieved through scientific processes appropriate to each level of the mind. Sarkar says that spiritual progress begins with the elevation of the protoplasmic cells and finally ends in the attainment of Cosmic Consciousness. As explained in chapter seven, devotional sentiment must be cultivated in order to approach the Great.

The second stage in the establishment of Neo-humanism is concerned primarily with the collective mind. Sarkar calls it "spiritual essence". He says that new thought patterns must be

instilled into the collective mind and that due to defective thought patterns in the past, the pace of human progress has been painfully slow. When the collective mind is infused with devotional sentiment, Sarkar says that this will generate entirely new global thought processes and a degree of global cooperation that has previously been undreamt of.

The third stage of Neo-humanism is "spirituality as a mission". This occurs when devotional sentiment spills over beyond the individual, beyond the collective mind and into the Cosmic Mind. When this occurs all human endeavour becomes sweet and blissful, all life is transformed into a sublime expression. It is the highest social expression that humans can achieve; it is the ultimate social ideal.

COSMIC CONSCIOUSNESS

As pointed out in the beginning of the last chapter, the word Consciousness refers to the capacity of human beings for self-awareness—the ability to say "I know that I exist". And of course self-awareness in humans is concommitant with intelligence and vital energy. Why is it that Eastern philosophy also refers to the fundamental substance of creation as Consciousness ? Quite simply because the fundamental substance of creation has these three qualities; self-awareness, intelligence and energy. Matter is energetic because energy is inherent to Cosmic Consciousness. Animals and plants have varying degrees of intelligence because intelligence is inherent to Cosmic Consciousness. Human beings have self-awareness, intelligence and energy because all three are inherent to Cosmic Consciousness. Something cannot come out of nothing. Mind emerges out of matter during the course of evolution because mind is latent within matter. Consciousness emerges out of mind because it is latent within both mind and matter.

Consciousness in its unbound, primordial condition is the fundamental stuff of creation. Yet for human beings It is shrouded in mystery; partly because It is so vast that it is beyond human imagination (not to mention words) and partly because It is so close that we cannot see It for looking. When Buddha was asked about the primordial condition of Consciousness, he remained silent. Some interpreted his silence as proof that Cosmic Consciousness does not exist, hence the atheistic schools of Buddhism, while others interpreted his silence as proof that It does exist. But the wise understood that Cosmic Consciousness is beyond words—It is the Nameless and the Formless. Buddha could not find the words to express that which is beyond words. Nevertheless mystics, saints and sages of all ages and all cultures have contemplated the mystery of Cosmic Consciousness and felt compelled to convey their realisations through books and discourses. It is difficult to keep something so beautiful to oneself.

Because Cosmic Consciousness is everything, because It is the ultimate Truth behind all the manifest things of the universe,

then to some extent It can be approached through words. Thus Cosmic Consciousness appears as the First Cause, as the Ultimate Effect, as the Nucleus of the universe, as the Substance of the universe, as the One without a second behind the many. Words and ideas cannot encompass the Great, but they can help us draw closer to It.

Part of the mystery of Cosmic Consciousness is that any attempt to talk about It involves paradox and contradiction. Cosmic Consciousness is both the One and the many, It is both the ultimate cause and the final effect, It is both the arrow (evolution) and the circle (homeostasis). The German philosopher Kant demonstrated clearly that any attempt to grasp the Absolute with the "Eye of Reason" inevitably gets lost in a tangle of contradiction. The later Positivists took this as proof of the non-existence of the Absolute. But Kant himself believed in the Absolute and understood that Its existence could be established through the "Eye of Contemplation". The purpose of this chapter is not to prove the existence of Cosmic Consciousness. This can be done only by the reader, cultivating their own "Eye of Contemplation"; but the author hopes that the thoughts and ideas contained here may inspire the reader to do just that.

Perennial Philosophy

It is usually assumed that only the Eastern traditions have achieved any deep realisation of Cosmic Consciousness and that the Western traditions have been too caught up in objectivity and materialism to grasp such subtlety. While in broadest terms this may be true, we should not forget that a slender and fragile tradition of Transcendent Knowledge has persisted in the West. Certain saints within the Catholic Church, for example Saint Francis, stands out in particular. St Bonaventure has already been mentioned. Unfortunately it must also be admitted that are Western tradition of Transcendent Knowledge survived in spite of, rather than because of, church dogma and bureaucracy.

The German philosopher Leibniz (a contemporary of Newton and independent co-discoverer of the Calculus) coined the phrase "philosophia perennis" or Perennial Philosophy to describe the tradition of the Transcendent in the West. The

phrase was later made famous by Aldous Huxley in his book of that name. Huxley defines Perennial Philosophy as "the metaphysic that recognises a divine Reality substantial to the world of things, lives and minds; the psychology that finds in the soul something similar to, or even identical with divine Reality; the ethic that places humanity's final end in the knowledge of the immanent and transcendent ground of all being."

According to Huxley all the major religions of the world and most of the lesser tribal lores contain a transcendent essence. This essence may be clothed in different words and hidden behind different rituals but it remains one and the same in all of them. The essential features of the Perennial Philosophy may be summarised as follows. Firstly is the idea of Monism, that the entirety of creation is but the One Entity, Consciousness, known in Hindu philosophy as Brahma. Secondly is the idea that Brahma is both immanent and transcendent; that is the creation is made of consciousness (bound) and yet aspires to become Consciousness (unbound). Thirdly is the idea that creation exists as a hierarchy of levels (in simplest terms matter, mind and Consciousness or as the seven Lokas); the lower levels being more dense, crudified and fragmented, the higher levels being more rarefied, subtle and unitary. Fourthly is the idea of interpenetration; that is the higher levels encompass and penerate the lower levels but not the reverse since the lower levels are fragmented and more confined. Fifthly is the idea that each level of creation is a holoarchy; that is, it has an internal stability of homeostasis. For example Einstein's General Theory of Relativity reveals the holoarchy of matter; ecological science reveals the holoarchy of the biological world; Gestalt psychology reveals the holoarchy of the psychic world. And of course Consciousness Itself is a holoarchy. Holoarchy and hierarchy are both contradictory truths within Brahma. Finally, the idea that the different levels of creation devolve (Saincara) and evolve (Pratisaincara), one into the other, giving rise to the cycle of creation or Brahmacakra.

Monism Versus Dualism

The fundamental and pivotal idea of Perennial Philosophy is "Advaeta", a Sanskrit word which means "non-dualism" or

"monism". Advaeta can be compared with "Dvaeta" or dualism. According to dualism, there are two entities in creation—the creator and the created or the Witnessing Entity and that which is witnessed. Monism says that the Creator and the Created are one—the Witnessing Entity is not distinquishable from that which is witnessed. This singular entity is Brahma. Care should be taken to distinguish the Monism of Perennial Philosophy from the Monism of the Materialists. Materialistic Monism says that only matter exists and that mind and consciousness are nothing but particular manifestations of matter. Matter is said to be sufficient unto itself and does not require an outside entity such as mind or consciousness. Materialistic Monism is a response to naive kinds of dualism.

The Monism of Perennial Philosophy as described by P. R. Sarkar is better referred to as Non-dualism. There is a subtle difference between Monism and Non-dualism. The latter means "the One without a second" or "the One outside of which it is impossible to step" or "That which cannot be looked at from the outside". Monism on the other hand can sometimes mistakenly be used to refer to the One as exclusive of the many. But Brahma is neither the one nor the many; neither the unified nor the separate; neither the permanent nor the changeable; neither the holistic nor the pluralistic. Brahma is above and prior to any conceptual elaboration; It is the One without a second.

In order to express the fundamental Truth of creation as revealed through the Eye of Contemplation (Intuitional Science), we need three statements; 1/ Brahma alone is real; 2/ the universe (of many forms) is illusory; 3/ Brahma is the universe. These three statements taken together are contradictory, yet if any one of them is omitted we fall into dangerous traps which are less than the Truth.

For example, simple Pantheism, the idea that God is the created universe but no more than that, accepts 1/ and 3/ but forgets 2/. It says that the manifest universe is Brahma and therefore in order to know Brahma all we need to know is the manifest universe. The problem with Pantheism is that it places a limit on Brahma by not acknwledging that Brahma is also the non-manifest. If Brahma is taken to be just what presents itself in the world then there is no inspiration to transcend that which we are now. Pantheism is so concerned with realising Brahma as

Immanent in the world that it forgets that Brahma is also the Transcendent.

By contrast the various schools of Mayavada, the doctrine of Illusion, accept 1/ and 2/ above but ignore 3/. They appreciate that the Absolute Brahma is beyond and prior to the manifest universe, but they then attempt to deny the reality of the latter. They are so concerned with the transcendent and its attainment that they ignore the immanent aspect of Brahma. The problem with Mayavada is that it is ultimately life-destructive. When the Transcendent is taken to be everything, then the creation is seen as nothing but an impediment. The doctrine of Mayavada inevitably cultivates a dislike, and eventually a hatred, for the manifest universe, giving rise to various kinds of violent asceticism. Ironically Mayavada is also self-defeating because the neglect and punishment of mind and body which it encourages makes spiritual progress impossible.

On the philosophical issue of Non-dualism versus Dualism, P. R. Sarkar adopts the stance of Pariprashna. Pariprashna means to ask those questions and provide those answers which inspire spiritual progress or movement towards the Great. Sarkar is never impressed with philosophical debate in the abstract since it seldom has spiritual benefits. The only point of philosophical enquiry is to inspire spiritual progress, and indeed this is the highest Truth which can emerge from philosophy. The spirit of Pariprashna is a spiritual utilitarianism. In the spirit of Pariprashna, says Sarkar, we must admit that human beings exist in a dualistic state but that they are moving towards Non-dualism. This is spiritual progress or Prati-saincara. The numerous entities in this unverse are in some sense separate from Cosmic Consciousness, but Cosmic Consciousness attracts all the separate entities to Itself. Eventually all those separate entities through their centripetal motion merge with Cosmic Consciousness, the condition of Non-dualism.

But the question naturally arises, says Sarkar, as to where the separate entities came from in the first place. Here in the spirit of Pariprashna, we answer that Cosmic Consciousness has the capacity to eject as well as to attract. "The One in whom we find the supreme positive power must also be endowed with the supreme negative power". So the numerous individual entities emerge from Cosmic Consciousness through centripetal

motion. Cosmic Consciousness was One, but "desired to become many in a sportive mood", says Sarkar. So according to Pariprashna the real philosophical stance should be non-dualistic, dualistic, non-dualism. In the beginning there is non-dualism; for some short time Cosmic Consciousness plays the game of dualism ejecting and attracting Its numerous created entities; and finally there is non-dualism when all the entities have merged in Cosmic Consciousness. Hence the cycle of creation or Brahmacakra begins and ends with non-dualism but passes through dualism. As Guru Gobind Singh wrote, "As the sparks flying out of the flame fall back into the fire, as the waves beating on the beach go back to mingle in the ocean, all things come of God, and return to God."

The First Cause

Brahma is One without a second. It has no parts. Philosophically speaking however in order to explain the creation of a manifest universe we distinguish two aspects of Brahma; the Consciousness Principle and the Operative Principle or Prakrti. P. R. Sarkar uses the analogy of a potter in order to explain the creation. There are three essential ingredients in the making of a pot; the clay, the imaginative power or consciousness of the potter, and the vital energy of the potter. This last links imagination and clay. On the Cosmic level, Consciousness is both the substance of creation or the material cause and the imaginator of creation or the efficient cause. Prakrti links these two together and Sarkar describes it as the "secondary efficient cause" of creation. Prakrti is a blind force or energy. It is not endowed with imagination or purpose—these belong to Consciousness as the primary efficient cause. Yet without Prakrti, Consciousness is completely impotent and can create nothing. Consciousness and Prakrti as the two components of Brahma are inseparable. Brahma is One, but It appears to have two aspects just as a piece of paper is one but has two sides. There cannot be one side to a piece of paper without the other, and likewise there cannot be Consciousness without Prakrti.

The question arises as to how human beings can know anything at all about these rarefied fields of philosophy when they are beyond the range of the mind. How can the mind compre-

hend anything that is antecedent to it ? How can the mind know its creator ? The answer is simply that "humans are created in the likeness of God". By directing their attention inwards, humans can comprehend Consciousness and Prakrti as properties of themselves. Prakrti is subordinate to Consciousness just as human will power is subordinate to human consciousness. Will power is induced by consciousness but cannot go beyond the range of consciousness. By itself will power is blind and undirected. But consciousness without will power is impotent.

That phase of creation in which Consciousness permits Prakrti to increasingly bind, confine and crudify is Saincara. In this phase the force of repulsion is stronger than the force of attraction. In the second phase of creation, the force of attraction of the Great is stronger than repulsion and Prakrti is forced to relax its grip. It is through the simultaneous play of Saincara and Prati-saincara that we are philosophically forced to acknowledge the existence of Consciousness and Prakrti.

The Cosmic Nucleus

That Entity from which all the objects in the universe are ejected by centrifugal motion and towards which they are ultimately attracted in a centripetal motion, is the Cosmic Nucleus. The Cosmic Nucleus is the focal point for Saincara and Prati-saincara and hence is a part of the created universe. One cannot talk of Unbound Consciousness as having a nucleus since It is the Formless, the One without structure. Nor however can we talk of the Cosmic Nucleus as occupying some point within the Creation. Brahma is One without a second. There no point in the creation where Brahma is not. Nor can it be said that Brahma is distributed through space and time like a super-rarefied ether. For this would mean that some part of Brahma existed here and the rest over there. Brahma is indivisible—if It could be divided into parts It would not be the One without a second. Hence the Absolute Brahma is complete in Itself at every point. Every infinitesimal point contains the Infinite completely in itself. So the Cosmic Nucleus is not some point within the Creation ; It is every point within the creation. It is 'here, now' just as it is 'there, then'.

We have already noted that Brahma encompasses all para-

dox. It is Immanent in creation and yet It transcends creation. Now we have more paradox. Brahma is Infinite and yet It is the Cosmic Nucleus; It is dimensionless and yet It gives rise to dimensions; It is causeless and yet It gives rise to cause and effect. The colour white can be used as an analogy to help with these paradoxes. White is the compilation of all colours but is itself colourless. In the same vein, Brahma can give rise to dimensions precisely because It is dimensionless; It is the Cosmic Nucleus precisely because It is the Infinite; It is the First Cause and the Ultimate Effect precisely because It is the causeless.

The All-Knowing

The capacity of humans to know the world is limited because we are separated from other entities and events by the three relativities of time, space and personal ego. If a stellar event, say a super-nova, occurs somewhere in the universe at this instant, we will not know about it until some distant time in the future when light rays from the explosion reach planet earth. The further away the super-nova, the longer the time taken for us to know about it. The limitation in this case may appear to be distance but in fact it is the speed of light. Let us suppose that the speed of light was ten times faster than it actually is. Then conceivably, that is, ignoring practical scientific complications, an astronomer would be able to witness ten times the number of Cosmic events. There would be an effective ten-fold contraction in the limitation posed by space or a ten-fold increase in our capacity to know.

Now let us suppose that the speed of light were infinite. Whatever Cosmic event happened, it would be instantaneously known to an astronomer sitting on planet earth. In this case there would be an effective contraction of space to zero and no space impediment in the way of acquiring knowledge. Remembering that this is an intuitive argument, it is as if Cosmic Consciousness enjoys the privilege of acquiring information at infinite speed. It does not suffer from any limitation of space, time or persons; all is instantly known to It, even that which is past and future. The Witnessing capacity of Brahma is infinite —all is here and now.

There can be no object or action without a witness. If a thief is caught by the police, they cannot be convicted in court without one or more witnesses. Legally speaking, the proof of guilt or innocence is dependent upon witnesship. What is true for a court of law is in this case also true on the Cosmic level. Cosmic Consciousness is the witness of every object and event in the universe. Nothing happens unless it is witnessed. The existence of creation and of each person and entity is dependent upon being witnessed by Cosmic Consciousness. The human soul or self is said to be the link between the individual person and Cosmic Consciousness. Whatever a person thinks or does is known to Cosmic Consciousness, thus there can be no secrets from Cosmic Consciousness. Conversely if a person cultivates a link with their unit consciousness then all the secrets of Cosmic Consciousness will be revealed. Thus P. R. Sarkar says, "If you want to know all, know One. That One is your Inner 'I' "

In order to know something, it is our habit to hold it at a distance and examine it from all sides. The knower and the known are separate and distinct. This is the condition of dualism in which humans are habituated. But how does one know the Knower, the 'Inner I' or Self which is none other than Brahma. Out of habit we try to know Brahma by stepping outside of It to examine It. But Brahma is the One without a second ; the One that cannot be stepped outside of. Brahma will not split into the knower and the known, just as the eye cannot look at itself looking. Brahma is so close that the attempt to look at It, puts It out of reach. It cannot be seen for looking. All the while It is as close as the 'I' which sees and the 'I' which knows. Brahma cannot be known except by absorbing the known within the knower or the objectivity within the Supreme Subjectivity—this is the secret of spiritual practices.

The Final Effect

Cosmic Consciousness is said to possess a brilliant radiance which illuminates the entire creation. This radiance serves several functions. Because it illuminates, it is part and parcel of the witnessing function. That which is not illuminated cannot be seen and therefore its existence is open to question. By way of analogy the existence of objects in a dark room is open to

doubt until the light is turned on. The radiance of Cosmic Consciousness is extremely alluring to all the created entities and this gives rise to the Attraction of the Great. Again by way of analogy, moths and insects are only attracted to a light because of its radiance. Strictly speaking there is nothing to distinguish Cosmic Consciousness and Its radiance—the distinction is philosophical only.

The radiance of Cosmic Consciousness is not absorbed by the numerous entities in the universe but reflected. The more subtle the entity, the more clearly it reflects the radiance of Cosmic Consciousness. The most frequently used analogy is of a mirror. Just as a dirty mirror cannot reflect light clearly, so cruder entities do not reflect Cosmic Consciousness as clearly as more subtle entities. Matter, being the crudest aspect of creation, reflects Cosmic Consciousness poorly. Matter alone has few sentient qualities. Primitive animals and plants having poorly developed minds, are better reflectors of Cosmic Consciousness, but the best reflector is the human mind. And of course human minds also vary according to their reflective capacity.

The more a person has the capacity to reflect Cosmic Consciousness, the more subtle and sensitive the person. As a person moves along the path of Prati-saincara, closer and closer to the Cosmic Nucleus, the more clearly they reflect the radiance of Cosmic Consciousness, and the more they themselves appear to become beautiful and radiant. While the finest sentiments and sensitivities of human beings may appear to be of human origin, in fact they are derived from proximity to the Cosmic Nucleus.

The Jivatman or human consciousness is a reflection of Cosmic Consciousness in the human mind. There is only one Cosmic Consciousness but many reflections. On a showery night, the moon can be seen reflected in countless pools of water—yet there is only one moon. Similarly, Cosmic Consciousness, although One, appears to be manifest in countless created beings. This is yet another consequence of the philosophy of Non-dualism.

It is interesting to note in passing that the Holy Trinity of Christian Theology was derived from this aspect of Eastern philosophy. "God the Father" is equivalent to Cosmic Consciousness, "God the Son" is equivalent to the human consciousness and "God the Holy Ghost" is equivalent to the radiance of

Cosmic Consciousness. All three are one and the same "God" but acquire different names for philosophical reasons. In addition the Christian and Jewish "Amen" is believed to be derivative of the "Aum" sound. However an intellectual appreciation of these subtle realms of philosophy is not the same as opening the "Eye of Contemplation", and it is in this practical spiritual realm that Christian teachings prove inadequate.

From the point of view of scientific enquiry, mind unfolds from matter and Consciousness unfolds from mind according to a long chain of cause and effect. If Prati-saincara is taken in isolation, it appears as if Consciousness is the final effect. In reality Cosmic Consciousness is ever present as the attracting entity.

Cosmic Consciousness and Supra-Aesthetic Science

Cosmic Consciousness is apparently elusive; It does not give up Its secrets easily. The person who sincerely desires to know Cosmic Consciousness will soon become dissatisfied with metaphysics and koans (Zen riddles). These things may be intriguing and they may be aids to spiritual progress but they cannot of themselves lead to the realisation of Cosmic Consciousness. Cosmic Consciousness has infinite artfulness and can easily evade any mere intellectual approach. Through the practice of Supra-Aesthetic Science the spiritual aspirant gains the realisation that Cosmic Consciousness is not an impersonal "It" but a "Sentiment Being" who has all the same capacities to love and be loved as does a human being. And like any human being, Cosmic Consciousness can be enticed far more easily through the heart than through the intellect.

In Supra-Aesthetic Science there are only two personalities —the Supreme -Personality and oneself; the Beloved and the devotee. In order to come to know another person, we would talk with them, share problems with them, spend time in silence with them and think about them. It is no different if we wish to know the Supreme Personality. Meditation and all spiritual practices can be understood simply as ways of coming to know the Cosmic Personality. But Supra-Aesthetic Science adds something extra to the relationship; it transforms mere acquaintance into love. The Supreme Personality is all personalities. All the

limited characteristics associated with race, sex or class are incorporated within the limitless personality of the Supreme. The relationship between the devotee and the Supreme Personality is so all encompassing and the charms of the Supreme Personality are so irresistable that the devotee has no choice but to draw close. Indeed Sarkar says Supra-Aesthetic Science primarily pertains to the Supreme Personality and human beings can hardly compare in their practice of it.

Some people can be drawn to another only if dragged by a rope; others can be drawn by sweet words of love. But the Supreme Personality uses none of these and attracts only through internal feelings of love. This is the inner spirit and inner secret of the entire course of evolution. Biologists may explain the evolutionary mechanism as "survival of the fittest" or "natural selection" but the devotee understands that all things are attracted by the magnetism of the Supreme Personality. Someone may say, "No! I don't want to go that way" but the Supreme Personality simply smiles and all that person's hardness and resistance melt away. This is the essence of evolution and the speciality of Supra-Aesthetic Science.

Human beings are attracted to the colourful displays of this material universe through inferential essences or Tanmatras. So far we have referred to Tanmatras only in connection with the physical world. But Tanmatras of a more subtle type also emanate from the psychic world and it is with these that the Supreme Personality entices each and every traveller in this universe to draw close. Psychic Tanmatras are not Cosmic Consciousness but when a person tries to trace them back to their elusive source, what a surprise to discover Cosmic Consciousness.

P. R. Sarkar describes five types of psychic Tanmatra ie smell, taste, light (form), touch and sound. Ordinarily a crude smell emanates from an object but the psychic smell Tanmatra is so subtle that the nose cannot trace it. Its source is beyond the range of the senses. Whenever a person is deeply absorbed in the thought of the Supreme, they detect this blissful aroma. The devotee exclaims, "How sweet, how blissful is this aroma. But where does it come from? I cannot locate its source but I must." This is how the Supreme Personality attracts you.

Next is psychic taste Tanmatra. Sarkar says, "On deeper

analysis we find that every object of this universe is sweet. Sweetness, not harshness, is the reality. The Cosmic Personality no doubt deals may blows to the microcosms but that is just to fascilitate their progress. Judged from a materialist perspective, every blow is apparantly harsh, but actually it is not harsh, it is soft." Ultimately each person recognises that they are being attracted by the sweetness of the Supreme.

We perceive all the beautiful forms of this creation through physical light Tanmatras, but behind these there are psychic form Tanmatras which are nothing but a reflection of the beauty of the Cosmic Personality. "My eyes are saturated with the joy of your beautiful forms. My mind is full of your qualities. Each of my limbs is yearning to come close to You." The psychic touch Tanmatras of the Cosmic Personality are the softest and tenderest expressions of creation. Human beings experience this softness in the deepest recesses of their heart. There is no scope for harshness here. The subterranean Cosmic flow operating in the human heart is always soft, never harsh. The Cosmic Personality does not want people to be harsh but to be soft. Outwardly these soft people may have to adopt a harsh composure against exploiters and cruel tyrants but by nature they are not hard. Tyrants are hard because they take a superficial view of life—they do not go deep. If they went deep into their heart they also would discover the softness of the Cosmic Personality.

Finally there is psychic sound Tanmatra. This of course cannot be heard with the ears but as the mind tries to trace these subtle sounds, it discovers the subtlest sound in creation, the Om vibration. Here is the subtlest expression of the Cosmic Personality.

But still there is one more step to go. The last stage of realisation for the spiritual aspirant occurs when s/he discovers that there is no sound, only all-pervading silence prevails. When sound is transcended, the spiritual aspirant enjoys unbounded spiritual bliss. It is to this end that the Cosmic Personality has been attracting the created beings with psychic Tanmatras throughout all the ages. And so the cycle of creation comes to a blissful conclusion.

Western scientists and philisophers are beginning to realise that Consciousness is the fundamental stuff of the universe. Today physicists know that they are on the edge of a universe far more subtle than anything they had dreamed of. While humanity has come a long way in its understanding of life and the universe, we still have a long way to go.

This book started with a verse from the Rg Veda. Perhaps now we can appreciate it with a new understanding:

"Behind all the manifestations in the universe there is One, a Cosmic Magician, who controls all.
Whatever has been or will be created is that One alone.
Those who realise this One Entity become immortal."

ERRATA AND NOTES

Despite the best efforts of the author and publisher, several mistakes appeared in the text. These mistakes have been corrected and additional notes added as follows.

Chapter One

Page 2—delete para 3 (lines 27-33).
Page 3—line 9—"to become the physical universe" should read "to become Cosmic Mind and finally the physical universe . . ."
Page 5—line 13—"particles" should read "protons, neutrons etc".
Page 10—line 6—"tha" should read "the".

Chapter Two

Page 19—line 22—"distortion of our" should read "distortion of four".
Page 19—line 26—"groove" should have inverted commas about it.
Page 20—line 21—"increasingly" should read "increasing".
Page 23—line 22—"the effect" should read "the indirect effect".
Page 27—line 4—"onwards" should read "outwards".
Page 27—final sentence para 1 should read "A stable structure forms where the interial forces succeed in forming a nucleus and counterbalance the exterial forces".
Page 28—delete para 4 and 5 (lines 15 to 29) and insert "Prana is also said to be the link between mind and matter. That is, thought processes give rise to Prana which in turn determines the play of the material world. Thus there seems to be an intimate connection between the concept of Prana and the force fields of Western physics. These force fields are composed of virtual particles. In the next chapter we shall see that some

physicists believe virtual particles to be created by mental processes.

The picture becomes more complicated when we examine biological organisms. In Brahmacakra, the vital energy or Pranah of living organisms is said to consist of ten vital airs. That is, Prana is being related to aerial factor. Here is another of the problems that remain to be worked out in the matching of Eastern and Western cosmologies".

Page 28—delete para 6 (line 31-37) and the top para page 29 (lines 1-11) and insert

"If an imbalance occurs in a compound structure such that the exterial force becomes dominant then the structure will disintegrate or fall apart. Paradocically Jadasphota begins with dominance of interial force. Under dominance of interial force or some externally applied pressure, the compound structure will contract eventually bringing a tremendous pressure to bear on the nucleus. At some point the nucleus collapses and the interial pressure rebounds as an exterial force. To put it simply the structure explodes. In Brahmacakra philosophy this is referred to as instantaneous Jadasphota. The most obvious examples of Jadasphota are stellar explosions or supernovae. Brahmacakra also refers to the phenomenon of gradual jadasphota, that is the gradual disintegration of a compound structure. This occurs where the initial contraction of the structure is offset by an exterial force arising from the nucleus. The pressure on the nucleus is only sufficient to sause gradual disintegration."

Page 30—line 13—insert sentence after "...and etherial".

"This also describes the process of radioactive decay, so radioactive decay may also be some kind of Jadasphota. It should be remembered that radioactive minerals found in the earth's crust were actually formed during stellar explosions. Uranium, for instance, is the remnant of an instantaneous Jadasphota."

Page 30—line 24—"explore" should read "explode".

Page 30—delete para 4 (lines 27 to 32).

Page 34—line 4—"controlled" should read "confined".

Page 38—line 3—"summaries" should read "summarise".
Page 38—line 21—should read "...that is zero potential energy".
Para 38—line 25—"is one place" should read "in one place".
Page 39—line 19—"disociate" should read "dissociate".
Page 41—line 6—"is is" should read "it is".

Chapter Three

Page 45—line 2—"wavelength" should read "universe".
Page 46—line 10—"vission" should read "vision".
Page 48—line 15—"radom" should read "random".
Page 49—line 29—"below is" should read "below in".
Page 52—line 9—"on light photons" should read "or light photons".
Page 53—line ——"goes to" should read "goes on to".
Page 55—delete lines 1-4—insert "...are intimately linked despite the fact that matter appears to be innert and unintelligent. There is a common misconception that matter is like a precipitate from a "solution of Consciousness" and that once formed matter leads an independent existence according to its own laws. For example Ken Wilbur (Eye to Eye p 145) argues that during Saincara mind generates matter and then disappears from the scene altogether. "It doesn't stay around to watch matter and thereby generate it." Wilbur's misconception appears to arise because he does not recognise the existence of the Cosmic Mind. Cosmic Mind is an integral part of Sarkar's philosophy and we shall see that it helps to solve some of the philosophical difficulties of Quantum Theory. All material processess....."
Page 56—delete para 3 (lines 35 to 40) insert "The ability of the vacuum state to manifest virtual particles (see previous chapter) is just the kind of example that should whet our curiosity. And a few brave physicists have indeed suggested that virtual particle formation is an example of the Cosmic Mind at work in the physical world. The phenomenon is highly significant for there

is no known physical mechanism for it to occur. It appears to happen spontaneously and by chance. The process involves an increase in order that has no apparent material cause. Some neg-entropic force outside of the usual material universe appears to be at work."

Page 57—delete para 3, 4 and 5 (lines 11 to bottom of page) and first para of page 58 and insert

"Super-luminal speed and intellect are both qualities which we associate with mind and certainly not with matter. To the physicist, the creation and destruction of virtual particles are random, statistical events that are apparently acausal. But from the point of view of Intuitional Science, these events are purposeful and caused. They have just the characteristics that we would expect of material events mediated by Mind. The strings attached to the puppet have finally been exposed.

So now we have a model for interaction between matter and Cosmic Mind that can be expressed in the language of physics (or at least partially so). The reader will remember that the "force particles" which mediate the four forces of nature are virtual particles. The force fields described by physicists are equivalent to the Pranic fields of Eastern philosophy. Prana is said to be the link between mind and matter. This author proposes that if the Cosmic Mind has the capacity to manifest virtual particles then it has the capacity to manifest the force fields which those virtual particles collectively constitute. Force fields in turn determine the motivity of matter, for example the behaviour of gases and the course of chemical reactions. Thus matter and Cosmic Mind are intimately linked down to the minutest sub-atomic level through the capacity of the Cosmic Mind to generate and destroy virtual particles (which are the particle manifestation of force fields). There are other modes of interaction but here is one that has the possibility of being investigated by both Physical Science and Intuitional Science."

Page 57—line 10—"rhe" should read "the".

Page 60—line 8—"unknonw" should read "unknown".

Page 61—the phrase "Implicit Order" should read "Implicate Order" wherever it appears throughout the book.

Page 62—delete para 3 (lines 17 to 33) insert "So now we know something about the Implicate Order for Quantum events. Information (neg-entropy) passes through it at super-luminal speeds, and from our previous discussion we would conclude that Cosmic Mind is involved. But Implicate Order theorists are not prepared to go this far. They are reluctant to commit themselves to explanations that are traditionally outside the jurisdiction of physics. Besides they seem to believe that the traditional methods can be made to probe the abstract realms behind matter.

There is a certain justification in the caution of the Implicate theorists. One is reminded of the adage "Understanding is the enemy of learning". Too often in the history of science, avenues of investigation have been closed off because their contents were understood as the work of God and therefore requiring no further investigation. If the implicate order behind quantum events is explained away as a mental phenomenon then physicists may prematurely give up the study of it. The point being made here is that Intuitional Science offers an additional rather than an alternative mode of investigating quantum events."

Page 63—delete para 5 (lines 24—31) insert "If physicists have discovered the Cosmic Mind in the two phenomena of virtual particle creation and wave function collapse, then it is only the crudest levels of the Cosmic Mind. As we shall see in the next section there are several levels to the Cosmic Mind all of which come between matter and Consciousness. Pure Consciousness is far too subtle and elusive to be caught in a mere physics experiment.

Page 64—line 18—"the scope of" should read "the creative capacity of".

Page 64—delete para 3 (lines 24—28).

Page 65—lines 5 and 6—delete "The largest realm is" and "Itself which". Sentence beginning in line 6 should read "Unbound Consciousness should not....."

Page 65—line 9—"the universe" should read "the physical universe".

Page 67—delete para beginning "Taparloka" insert "Taparloka; the first appearance of vibration which appears in Consciousness is the Taparloka. The standing wave of Taparloka encompasses all that exists. The Taparloka is not disturbed by any limited idea or sense of individual existence. Hence it is beyond the imagination of the individual human mind."

Page 68—delete para beginning "Janarloka" insert "Janarloka; it is in this realm that the first manifestations of form emerge out of Consciousness and these are referred to as Archetypes. As a consequence it is in this Loka that the first sense of separately existing entities arises. Wisdom, detachment and spiritual knowledge arise in this Loka. Although the human mind can enter the Taparloka the experiences cannot be easily grasped or formalised. Hence this Loka is sometimes called the Subliminal.

Page 68—delete para beginning "Svarloka". Insert "Svarloka; Here opposites are sufficiently separated to allow logical and rational thinking; that is intellect in the traditional sense operates at this level. Presumably the force of negentropy or information which creates virtual particles has its origin at this level; that is the Svarloka is the Implicate order behind quantum events. Here the Cosmic Mind prepares its rational blueprint for what is to become the physical universe."

Page 68—delete para beginning "Bhuvarloka ;" Insert "Bhuvarloka ; It is through this realm that the Cosmic Mind directly creates, controls and enjoys its physical creation. This is the realm of Prana, vital energy, force fields and virtual particles. It is the link between Cosmic Mind and the gross physical universe."

Chapter Four

Page 73—line 13—"structure" should read "structures".

Page 86—line 6—"expells" should read "expel".

Page 86—line 6—"imports" should read "import".

Page 87—Fig. 28—"Change separation" and "Change Equilibrium" should read "Charge separation" and "Charge equilibrium" respectively.

Chapter Five

Page 88—delete sentence beginning in line 7.

Page 83—line 34—"the limbic brain" should read "the limbic brain and the neo-cortex".

Page 98—lines 4 to 23—the two paragraphs on Gaia should be read as a footnote. They are not meant to be in the main text.

Page 98—line 37—"Phycologists" should read "Psychologists".

Page 99—para 3—the point here is that matter attempting to trace a path back to Pure Consciousness by way of negative-Saincara, demonstrates some behaviour similar to life in its attempt to trace the path of Prati-saincara back to Pure Consciousness.

Page 100—line 17—delete "and the realisation of the quiescence of existence".

age 102—Fig. 31—delete words "bliss, devotion, intuition and subtle human values" in the right hand column.

Page 106—line 18—note that in Quantum Mechanics, human mind may **participate** in the creation of matter particles (Tanmatras) but does not create the 5FF.

Chapter Six

Page 109—line 13—"the species" should read "the human species".

Page 109—line 36—delete entire line. Insert "but these do not have high status in the usual developmental schemes of Western psychology."

Page 110—line 14—Add at the end of para "This author can do no more than point out the problem".

Page 110—line 20—delete sentence beginning "However there is no..." and all subsequent stntences to end of paragraph ie delete lines 21 to 31.

Page 113—line 13—"ingnores" should read "ignores".

Page 113—delete paras 2 and 3 (lines 16 to bottom of page) and delete lines 1 and 2 of page 114.

Under heading "The Subjective Mind" insert as follows; When comparing Eastern and Western psychology, the term 'self' should be used carefully. In Eastern psychology 'Self' (with a capital S) is used as a translation of Jiivatman which is the Unit Consciousness or Witnessing Entity. Jiivatman is beyond the mind and is also sometimes translated as Soul or Spirit. The 'self' (small s) as used in Western psychology is still not a clearly defined term and has only recently become an area of study. As explained in the last section, 'self' is variously used in three contexts. Only the first of these, 'self' as an independent organising principle which integrates and coordinates the activities of all levels of the mind, corresponds to the Eastern Jiivatman. The Western 'I feeling' may be taken as something similar to the Eastern Mahat and the Western will power and ego may be taken as something similar to the Eastern Aham. In Eastern psychology there are three components to the mind, Mahat, Aham and Citta. Mahat and Aham form the subjective mind while Citta is the objective mind. Each of the five structural levels or Kosas of the Unit mind has all three of Mahat, Aham and Citta but in differing proportions. See Figue 36.

Page 114—line 32—"increases volume" should read "increases in volume".

Page 114—delete the bottom para (lines 36 to 39) and delete lines 1 and 2 at top of page 115.

Page 116—line 1—"were" should read "where".

Page 117—line 27—"simple" should read "unsophisticated".

Page 117—line 15—the term "Inserted Program" is better replaced by "User Program" wherever it occurs.

Page 120—line 24—"is bliss" should read "in bliss".

Page 122—line 8—"silver" should read "sliver".

Chapter Seven

Page 130—line 33—"inevitable" should read "inevitably".
Page 133—line 35—"this pen" should read "his pen".
Page 134—line 35—"illustion" should read "illusion".
Page 135—line 28—"for human Dharma" should read "of human Dharma".
Page 136—line 37—"in the Great" should read "is the Great".
Page 139—line 22—"from itself" should read "from Itself".
Page 140—line 31—"chapter nine" should read "chapter ten".
Page 145—line 10—"inpire" should read "inspire".
Page 147—line 5—"many" should read "may".
Page 148—line 6—"paricular" should read "particular".
Page 152—line 4—"deevlopment" should read "development".
Page 154—line 39—"inherenly" should read "inherently".
Page 157—line 3—"consumption" should read "consumation".
Page 159—line 27—"by the year" should read "each year".

Chapter Nine

Page 180—line 5—"conscious collective" should read "collective unconscious".
Page 180—line 9—"three" should read "tree".
Page 185—line 26—"distorted shape" should read "distorted the shape".
Page 186 line 23—"era due" should read "era is due".
Page 187—insert para between lines 2 and 3.

"In addition to the dialectical mechanisms mentioned so far there are other important strands to the story of human history. Just as we referred to "structural" and "self" development with respect to the unit mind (see Chapter 6) so too there are strands of structural and self-development in the unfolding of the collective mind. Structural development can be translated as the increasing "radius" of the collective mind. Radius refers to the average maximum grouping of people who can function effectively as a cohesive society. The word average is used here to discount shortlived empires that over-reach themselves. Self-development of the collective mind refers to

the collective moral and world views of the society. Note that structural and self-development of the collective mind proceed with pause and speed—not uniformly".

Chapter Ten

Page 199—bottom line—"four" should read "at least three".
Page 200—top line—delete "a tuning device".
Page 206—Fig. 42—delete "rational behaviour".
Page 206—Fig. 42—delete "emotional sentimental behaviour" and insert "paranormal phenomena".
Page 206—Fig. 42—delete "instinctive behaviour" and insert "paranormal phenomena".
Page 208—line 11—"into" should read "in".
Page 209—line 11—"attempts" should read "attempt".
Page 209—line 12—delete "and".
Page 210—top line—delete "Besides the Positivist sciences".
Page 211—line 13—"opservation" should read "observation".
Page 216—line 36—delete "However, it is not the intention of this book to go into the techniques of Intuitional Science, as".
Page 217—top line—"they can" should read "They can".
Page 218—line 11—"multiplications" should read "multiplicities".
Page 219—line 3—"We begin" should read "We began".

Chapter Eleven

Page 220—line 13—"material" should read "material world".
Page 232—line 16—"peoples" should read "person's".
Page 239—line 32—"are" should read "the".
Page 240—line 26—"stability" should read "stability or".

ETERNAL DANCE OF MACROCOSM

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